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Impact-oriented funds: overview and descriptive analysis of the market

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Despite of everything, it's over.

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Introduction

This thesis was produced at the end of the Master's Degree in Engineering and Management at the Polytechnic of Turin, on the basis of the research activity carried out by the writer as part of a competition organized by the MIUR (Ministero dell'Istruzione, dell'Università e della Ricerca) addressed to the Italian universities to deepen a new topic and for which both at the level of literature and material there is not much: the Impact – Oriented Funds.

The purpose of this work is to analyse the characteristics of the market inherent to private equity and venture capital funds that operate with a specific social-environmental objective, exploiting a database built *ad hoc* that collects the profiles of hundreds of funds and of companies in which they invest.

The thesis is structured in 5 chapters: the first two constitute a review of the literature; in particular, the first introduces private equity and focuses on the differences between the latter and its sub-set, the venture capital.
The second chapter focuses instead on the impact-oriented funds, a new instrument of finance, of which there is not much literature yet and therefore it was necessary to clarify, to illustrate its functioning, to tell its origins and the critical points.
The third chapter introduces the database created to conduct the final analysis: there is a report on the origin of the data and an overview of the multiple matrices that makes up the database itself; there is a description of each table as well as the main variables and logics used to create it.
The fourth chapter focuses on the analysis of the collected data and the presentation of the main analysis and descriptive statistics regarding the funds, the companies and the investments between them.
The thesis concludes with a chapter that takes up the problems and dynamics introduced with the literature and then reviews the results, bringing out any similarities or contrasts with what was analysed at a theoretical level.

Chapter 1

Overview about Private Equity

1.1 – Introduction: features and structure of the Private Equity

Private equity is a financial activity with which an investor, usually an institutional investor, takes over shares in a target company, buying newly issued shares, thereby bringing new capital into the company itself, or obtaining it from third parties. The concept of "private" refers to the fact that these securities are not freely traded on a regulated market.
These investments are therefore only accessible through entry in specific private equity funds, once reserved only for those with a certain income and able to maintain it in the long term. Today these constraints have partly eased.
In this type of financial activity, the purpose of the profit is to take over large shares or even entire companies, often resorting to debt, in order to restore or reorganize them and then to sell them at a higher price than that previously paid. Using debt instruments to realize these operations should not be a surprise, as in this case the advantages of the financial leverage are exploited (see tax shields).

The investments in the private equity sector include a wide range of operations that can be classified, depending on both the investment technique used in the transaction and the moment of the vital phase of the target company during the time of the operation.

Private equity transactions can be assembled into five categories depending on the degree of maturity of the company in which it is invested:

- *seed capital* or *angel investing*: investments made during the start-up phase without any kind of returns;

- *venture capital*: investments in existing companies which however have negative cash flows, large growth potentials and cash requirements to finance the launch of products or services;
- *development capital*: it is the same as the previous point, the only difference is that here the company generates positive cash flows;
- *management buy-out* (MBO), *management buy-in* (MBI) or *buy-in management buy-out* (BIMBO): these are operations linked to medium-large companies where management assumes the role of entrepreneur by taking over the company with a fund of private equity. They are called MBO those in which the company's management buys, MBI those in which there are external managers of the company which buy and BIMBO those in which there is a mix of internal and external managers to take control of the company;
- *special situation* or *turnaround funds*: investments that do not fall within the previous categories and they are realised in companies in crisis. They are subdivided into operational turnaround and financial turnaround.

The entities which are using more the private equity sector are funds, which are taking on ever greater importance in the national and international scene for their function of intervention and support in companies of all sizes in order to develop their business.

Taking in consideration the national scene, just in Italy the companies owned by private equity or venture capital funds have performed better results than the other companies in terms of revenue, EBITDA and employment. This is shown by a study carried out by PricewaterhouseCoopers (PwC) during the period 2006-2016 on a sample of 492 disinvestments.
These funds generally present a recurring structure: they are organised as limited partnership (LP, abbreviation often present at the end of the name of the fund itself) or limited liability partnerships (LLPs) Anglo-Saxons forms which are similar to the Italian legal form of "S.a.p.A" (Società in Accomandita Per Azioni).

The company or the companies which manages the fund is defined as *general partner* and obtains the necessary capital from the *limited partners*, defined as such because they have a responsibility limited only to the

amount paid for the share. Instead the first is solidly responsible for all the activities carried out by the fund itself, it has full autonomy on investments – unless there is a State that imposes some restrictions or constraints among the limited partners – and usually it enters a quota that is placed in a 1-5% range of total capital. The role of the general partner is therefore very important, and it not only concerns the management of the fund, but also contributes to reduce the information asymmetry between the parties, the uncertainty and the agency costs that would otherwise arise if the investors (limited partners) decided to invest directly in the target companies.

Private equity funds invest in private companies or listed companies that would like to become private by delisting themselves from the public stock exchange and usually they are in a growth phase and/or in high risk sectors; circumstances for which it is virtually impossible to obtain financing through less expensive channels such as the banking and/or bond sector (debt instruments) due to the high volatility of the core business, very few guarantees placed as collateral and due to the uncertainty of a proper economical return.

The collection of investments has a duration that depends on many factors, first and foremost the level of investor interest, obviously influenced by the current economic cycle, by the market conditions, by the performance of past investments and by the track record of capitals collected in the past by the fund itself. On average, the assemblage lasts from 9 to 12 months.

Once the capital has been collected, often with the help of external placement agents, the general partner must identify at least one suitable target company, in line with the object and the type of funds, in which to make the investment. Before implementing it, there is a due diligence phase of the company: an analysis and evaluation of the convenience and of any risks and/or problems that may arise.

Conditionally to the successful outcome of the previous phase, the general partner then carries out the so-called *capital call,* that it is refers to the shares of capital that had been subscribed by the investors.

All investment or divestment's decisions are taken at the level of the general partner possibly together with the main investors (limited partners) or with an advisory board representing them and, when necessary, together with independent external members which guarantee maximum transparency and less involvement or possible conflict of interest, at the request of investors. The autonomy of the general partner regarding these operations

is large depending on the possible presence of the State among the investors.
All the investments of a private equity funds are defined as investment portfolio.
An important distinction to make in this context is between “open private equity funds” and “closed private equity funds”. As the term suggests in the first case, these are funds where entry and exit are free, it is sufficient to pay the capital or request a refund of this. This means that the total assets of the fund are different from day to day depending on the inputs and outputs of investors and on the performance of the investments; this is the case of listed funds. The closed funds, on the other hand, those most used in the private equity sector, are characterized by the fact that the repayment of their shares might only be requested in certain periods: this is due to the total amount of shares that is fixed, invariable and predetermined. Therefore, for every subject that disinvests there must be another investing, and this is easier if done only in limited time windows; in addiction the total assets of this typology of funds can variate on a daily basis just for the market and investments’ volatility.

The venture capital funds deserve attention. Despite the strong correlation and similarity with those of private equity, being a sub-set of private equity, they present interesting differences.
In terms of operations and objectives, the venture capital, being a sub-set, operates in the same way as of the private equity: it seeks to fill the so-called equity gap, i.e. the difference between supply and demand of capital. Therefore, what has been said until now, applies to both of them.
The main difference concerns the maturity of the company in which we invest: the venture capital funds collect and enter liquidity in medium-small companies with a high growth potential or even in start-up (phase seed/early stage and/or phase of expansion), on the contrary with private equity funds, whose target is represented by more mature and already established companies that have problems of inefficiency, or that need to be reorganized or fail to realize profits and therefore erode wealth by losing value. In one hand we have an existing company, growth and with products and/or services already launched on the market, while on the other hand there is a potential business, perhaps with good ideas and drafts of products and services to be proposed.

Furthermore, while private equity funds usually acquire 100% of the company in which they intend to invest, venture capital funds never exceed 50%. This guarantees them a good risk diversification by having a portfolio composed of equity of companies that are very different from one another and as they are relatively new they also present a high risk of default. So, if a start-up were to fail, the fund would not suffer such a significant loss.
The following 1.1 figure summarizes the further differences and similarities between the two types of funds.

	Venture Capital	Private Equity
Target Investments	Tipically startups or small to medium size enterprises, often in pre-revenue stages	Tipically large, mature and private companies that are underperforming or undervalued
Funding Structure	Equity	Equity and/or Debt
Investment Sizes	$ 50.000 to $ 5 million	Large investments: from $ 100 million up to tens of billions
Fee Structure	2 / 20 fee structure (LPs tipically pay 2% annual management fee on committed capital and 20% carry on any investment profits)	2 / 20 fee structure (LPs tipically pay 2% annual management fee on committed capital and 20% carry on any investment profits)
How Investors (LPs) Make Returns	When cash is returned on liquidity events (e.g. startup gets acquired, exits or IPOs)	When PE firms exit their investments, sell companies for an higher price than what they paid to purchase them
Investment Horizon (Lockup Period)	Tipically 10 years	Tipically 10 years
Liquidity	Very illiquid	Very illiquid
Top Concerns Investors (LPs) Have	Fees, valuations, illiquidity	Fees, economic environment (due to use of leverage), illiquidity

Life Cycle of a Firm

Pre-product/service
Pre-cashflows
Pre-company

Existing product/service
Existing cashflows
Existing company

Figure 1.1 – Main differences between Venture Capital funds and Private Equity funds.

About the structure with which they operate and invest, it is summarized by the below scheme in figure 1.2 and it is the same for both.

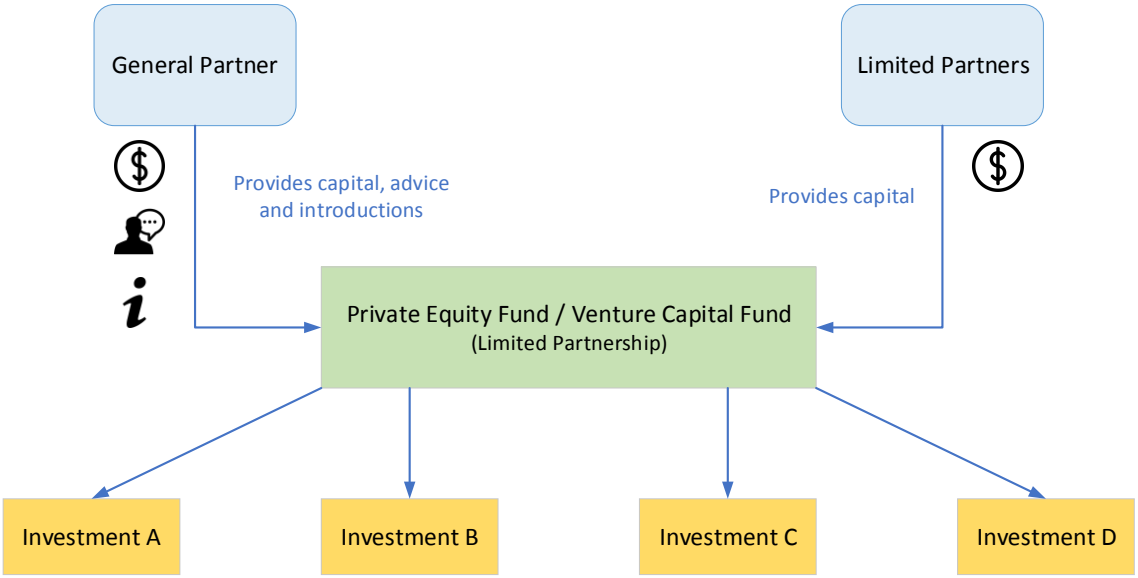


Figure 1.2 – Scheme illustrating the functioning of Private Equity and Venture Capital funds.

However, regardless of the type of fund, the role can be active or passive in relation to the company in which the investment is done, depending on the strategy adopted: typically, there is a passive involvement with already mature companies that need capital to make acquisitions, to restructure internally or to expand themselves into new markets.
As far as the active role is concerned, the goals are not very different, the substantial difference is, however, the fact that in the latter case the capitals are not only placed in the company, as in the first case, but there is also a strong decision-making role on how they are used and managed, probably because these companies are newer and less expert than the first ones.
Private equity funds can last between 5 and 30 years even if the average on the market is 10-12 years, while funds of funds can reach as much as 15 years.

For the sake of completeness in the discussion, it should also be added that, nowadays, the most active players in investments in private equity funds are, on average, sovereign wealth funds.
The hedge funds also deserve a brief mention, they should not be confused with private equity funds because they deal, contrary to the latter, of more liquid securities, oriented towards the short term and therefore easier and faster to convert into cash. In addition, private equity firms take long positions just because in this asset class short selling is not possible.

1.2 – The situation in Europe and the intervention of the governments

In Europe the fundraising is exercised by the two channels described above, especially in favour of new and early-stage entrepreneurial ventures, but it is still rather limited and focuses on a small fraction of business and sectors. This conclusion should not surprise, as in most of the European countries – Italy, France and Germany in the first place – are bank-based, they use in fact the banking sector as the main source of financing, to the detriment of the stock and bond market. A diametrically opposite situation in the United States of America and in the United Kingdom, Anglo-Saxon countries characterized by a market-based system.

This implies that private equity, seen in the etymological sense of the word, as investments made only by *private* subjects in the equity of companies that are also *private*, is not much widespread in continental Europe. Not surprisingly the European Commission to make up for this lack, has made the European Investment Fund (EIF) the largest investor of European venture capital, also launching an action plan to promote risk capital: the Risk Capital Action Plan. All this to make businesses more independent from the banks, encourage the development of alternative financing channels and exploit the potential that would result from an expansion of the capital markets.

The EIF is an European institution – whose main shareholder is the European Investment Bank (EIB) with 62% of the shares – which supports the creation and subsequent development of small and medium-sized enterprises, which specializes in small and medium size enterprises (SMEs) equity financing; it is not by chance that it is the manager in many venture capital and/or private equity funds (and funds of funds). It also accompanies the pre-and post-investment phases by providing support and advice to the funds which it manages. A due diligence phase, similar to the one carried out by the fund and mentioned above, is made by the EIF above all in terms of quality and professionalism of the management team of the fund in question, and the type of target companies they invest in as they have to comply with the Risk Capital Mandate issued by the EIB and adopted by the EIF.

The goal of governments and authorities is to promote policies aimed at supporting equity, as a form of financing, since it favours technology-based

or capital-intensive companies, hence the most efficient, innovative, in step with the times and in more volatile sectors.
However, such initiatives are not often enough, and institutions need not only to give the rules but to actively participate in the investments.

1.3 – The involvement of institutions in investments and the hybrid funds

Public intervention is necessary first of all because often the private sector has small amount of capital and, secondly, because contrary to private investors, whose sole purpose is to obtain an adequate return, the aims of the government go beyond mere economic interest and also concern the consequent return at the social level as the creation of new jobs – reduction of unemployment rate – the stimulus to innovate, the economic impulse that derives from the reorganization of enterprises and the consequent increase in the overall wealth of the nation (the GDP) and these are very important factors in unfavourable phases of the economic cycle.
The involvement of the government has two consequences: on the one hand, it has average capacity and means to identify potentially better investments or anyway it can delegate this selection process to financial intermediaries. On the other hand, the objective of the State is to attract the private sector both about investors and on expert managers who could manage the funds or investments.
However, it has been demonstrated that initiatives involving only the State do not lead to efficient solutions, since there is a noticeable increase in barriers to entry to private capital and, moreover, often the allocation of financial resources is not optimal at all.
The first problem is explained by the crowding out effect with respect to private capital: public capitals are found at lower costs, so the public administration will decide to invest them in potentially better, safer projects and therefore with a lower average yield (Armour and Cumming, 2006; Cumming and MacIntosh, 2006; Leleux and Surlemont, 2003;).
The second problem, which is easier to understand, is that public sector managers are often less expert and do not enjoy sufficiently attractive

incentivises such as those guaranteed by incentive schemes liked to the objectives and economic performance of the private sector.
The government can intervene directly or indirectly: in the first case it becomes a limited partner in a fund or invests in a company, in the second mode it stimulates investments or the market, and the consequent demand for capital, through private equity, thanks to policies, tax relief and targeted tax incentives.

It follows that the best solution is a synergistic participation of State and private individuals.
Whether the State participates directly, a so-called *hybrid*[1] fund (hybrid public-private fund) is created. It is an entrepreneurial entity whose main objective is to pursue systemic social improvements, the so-called social innovation thanks to its business. These funds are agents of the systemic innovation where each actor influences others and the benefits can only be achieved by joining and cooperating with related, complementary innovations.
There is no precise definition for the hybrid business model; a common thought regarding these organisations is that of Seelos and Mair (2007) which states that they are "*a set of skills organised to facilitate the creation of value useful in pursuing economic and/or social strategic aims".*
A further analysis of the literature allows us to focus on the key elements of these structures that combine social and economic aspects through innovation processes aimed at solving social and environmental problems thanks to new solutions capable of generating added value and a return for the whole company.
On a practical level, they are defined as "*hybrids*" since ownership is partially public and partially private; the presence of the public administration is certainly a positive factor because it mitigates the perception of the risk concerning the investment giving assurance to private investors. The presence of the State is in fact seen as a guarantee factor – Cumming, 2007 – and the immediate consequence is a strong attraction of potential private investors since the information asymmetry between the parties is reduced (*seeding hypothesis,* Leleux and Surlemont, 2003); in addition, the

[1] In the elaborate with the term "hybrid" we mean all the types of organisations that have a co-participation of public and private investors; therefore with the expression we do not mean the structures defined as hybrid because they invest in a mix of stocks and bonds, or in multiple asset classes, whether this will be the case during the elaborate, it will be opportunely specified.

government often agrees to participate in the hybrid funds even on less advantageous terms than other investors. This allows that some areas of investments are covered, otherwise they would be uncovered in the private equity capital market (*herding hypothesis,* Devenow and Welch, 1996) and, the further positive aspect is that there is risk sharing between public and private subjects. The public administration could also identify investments able to generate a positive social return or positive externalities, even indirect, which would benefit the entire community (*spillover hypothesis*).
However, empirical evidence shows that further problems may arise: for example, there are fears that the public investor has different objectives than private ones, moreover and usually, the investor-State is very binding and tends to exercise a strong pressure to the geographical area of the investments, in the industrial sector in which to intervene and the type of target company in which to introduce capital. All this without forgetting possible systematic criticalities that would derive from an inefficient allocation of capital, the consequence of which would be an alteration of the financial market itself.
On average, the level of public participation in a hybrid fund shows a weak negative correlation with the probability of observing a write-off of the companies on which it has invested; this consideration is worth more for new companies (start-up), those operating in high-tech sectors or that have been founded by specialized seed-money venture capital funds. This does not mean that funds with State participation have better capacities to select investments; rather, it is synonymous that such funds choose ex-ante investments with a lower risk. Moreover, the higher the public ownership is, the longer the investment lasts: therefore, the intention is to invest in target companies able to generate a long-term social return (so-called patient investor), even if the expected return is below the average compared to investments made by privately-owned funds. However, it should be added that both phenomena are very difficult to study separately, since they are highly correlated: the funds in which there is a low presence of write-offs are also those in which, obviously, the average duration of investments is longer.
These cases do not constitute the rule in this sector and do not always occur, however, it is good to mention them in order to make an exhaustive explanation of the matter since in any case their realization is possible.

The public instrument on which we will focus, however, are the investment funds, despite the existence of various types of aid such as grants, tax breaks and tax incentives that obviously vary depending on the country on which the investigation is focused. The purpose of these tools, and of public intervention in general, is to feed the demand and supply of capital to be able to reduce as much as possible the existing equity gap and remedy those that are considered real and own market failures.
As anticipated, there may be restrictions: usually the constraint imposed by the State is that the fund in question must invest in domestic companies, in national funds or even in foreign funds but which in turn invest in national companies. In short, the focus is that in the face of a State investment there is an economic return, such as the development of the risk capital market and consequently of the companies, and possibly, a social return within the border of the same county.
On the contrary, fully private funds will have portfolios composed mainly of companies able to generate economic returns in the short term (impatient strategy) given the interest of investors to derive profit from their investments.
Obviously, the ability to identify these two types of investments involves knowing and understanding the market trend, the conditions of the various sectors, the evolution of the competitiveness that characterizes them and technological progress.

1.4 – Hybrid funds: operation, distribution of profits and costs for investors

By analysing the internal structure of hybrid funds, we can see that it is identical to that of private equity funds. In fact, the subjects involved remain the general partner(s) and the limited partners, but what changes is that one of these two subjects is the public administration that is represented by a subject called governmental management company.
The public entity usually entrusts to the governmental management company, public or private, the choice and then the administration of the fund or of the share held by it. The role of the governmental management company is therefore of fundamental importance, it is not a coincidence

that they are highly qualified professionals, totally untied by the investors and often belonging to the private sector.

The governmental management company can invest directly in the target companies, possibly through a fund, or in so-called mixed public-private capital funds of funds: a sort of portfolio made up of several investment funds, whose main advantage is risk diversification. The fund of funds invests in turn the money raised in the funds, usually 25-30, of its portfolio which will then select the target companies to make their investments; unless the investment of the manager is directed at the target company, the State becomes a limited partner in the fund.

Funds of funds are a direct access to hedge funds for the small saver, being able to invest in shares of them, often foreclosed because of the high threshold of incoming assets.

The reality suggests that direct investment in the company is an increasingly undesirable solution since mistakes in the choice of the company could lead to a misallocation of financial resources with the consequences that derive from it (cf. crowding out); this suggests that the scheme that sees the "principal" State that delegates the management of its capitals to an "agent" fund is the most widespread modus operandi.

Therefore, the most used form is indirect investments that take advantage of the experience of professional investors and managers of the private sector, such as general fund partners.

Obviously, the available capitals are of private, public or mixed matrix depending on the structure of the fund. The 1.3 image below summarizes the aforementioned methods of public intervention.

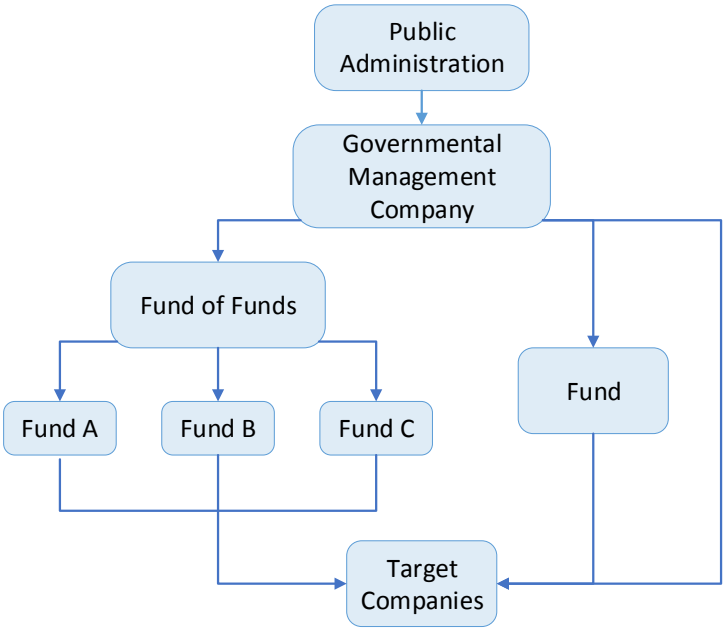


Figure 1.3 – Scheme illustrating the modality of investment of the public administration: respectively by indirect way – through a fund of funds or a simple fund – and by direct way in the target company.

Regarding the incentives and the distribution of profits in hybrid funds, when the public entity decides to invest, there can be three different structures:

- *pari passu* scheme: limited public and private partners enjoy the same treatment and there is no distinction between the two; they will share both the profits and the losses, in case of good or bad management of the fund respectively, in proportion to the amount paid for the shares;
- *downside protection* scheme: State decides to bear most of the losses, up to a maximum of 75% of the losses of private investors, in addition to its share;
- *upside leverage* scheme: the public entity offers a series of incentives to private investors in order to guarantee them a higher expected return; briefly describe some facilities granted to limited private partners by way of example.

  The State could be the first to invest and the last to collect profits: being the first investor reduces the duration of the private investment and consequently increases the latter's internal rate of return (IRR). Another advantage could be the possibility to grant the buy-out to private individuals before the investment is finished i.e.

the possibility to exercise the right to purchase public shares, by a certain date and at a given price fixed at the origin; or it is possible to offer a minimum return guaranteed to individuals (so-called preferred return or hurdle rate), beyond which the public entity also starts to obtain a yield or, again, a capped return is set for the public investors. After all the investors, including the State, have received the right profits, proportionally to the quota held, extra-yields exceeding the cap are only and exclusively distributed between private individuals, regardless of whether they are general or limited partners (also in this case there is a consequent increase of the IRR). Furthermore, the State can make a loan investment, that provides the capital in the form of a loan, with relative interest, so that private investors can further amplify their returns by exploiting the leverage effect of this debt.

Obviously depending on the chosen scheme there is a different attraction towards private risk capital. The first exercises a lack of attractiveness towards private investors because the two subjects are on the same level; the second attracts investors but does not guarantee that the fund will be managed efficiently since, at worst, the losses would almost all be borne by the State; this scheme may consequently trigger any opportunistic behaviour.
The last is instead the best mechanism both to attract resources and for a good direction of the fund by going to act not on the risk perceived by the investor but on the expected return; in particular, as evidenced by a study by Jääskeläinen, Maula and Murray (2007), asymmetrically timed public and private investments guarantee the greatest increase in expected returns for limited private partners, after deducting the costs related to the compensation of the general partners.
It should however be stressed that the public entity often does not collect the cash flows resulting from investments, in proportion to its share, but reinvests them in new projects: this indicates that the objective function of the public investor does not only maximize the financial return but also that social aiming at national welfare.

Regardless of the type of intervention (direct or indirect) and the scheme (pari passu, downside protection and upside leverage) the public entity exerts a strong influence, especially as regards to the requirements of the

fund to which the capitals will be allocated and the relative shares will be subscribed, and the target companies that will benefit from the cash flow and the participation of the fund itself within their equity. It is therefore evident that the presence of the State influences both the choice of investments and their subsequent management.
At the operational level, *first closing* is defined as the entry of the main investors into the fund with the subscription of the share and the related deposit of capital, in proportion to the investment held. It is possible to talk about *final closing* with reference to the entry of additional investors, generally private, on a date that is obviously postponed with respect to the previous event. It is not a coincidence that often the first closing collects mainly public capitals, as mentioned in the upside leverage scheme – and underlined by Jääskeläinen, Maula and Murray.

A fundamental aspect to mention is the compensation structure of the general partners which manage the funds; in the private sector, in order to align their interests with those of the investing members (limited partners), there is a tendency to index the remuneration with the performance of the fund according to *carried interest* or "*carry"* and *management fees.* These last commissions are usually a percentage, of the total committed capital, paid by the limited partners; it is a percentage that varies from 1.5% to 2.5% per year, normally 2% of the total capital managed by the fund, as indicated in the fourth row of table in figure 1.1. This percentage is not seen as a real profit for the general partners, given the small amount, especially for small and early-stage venture capital funds; it is rather a sort of reimbursement for the investment costs incurred by operating agents. On the contrary, the carried interest is calculated as a fixed percentage of the net profits earned by the fund: generally, it is the 20%; with net return reference is made to the cash to cash returns for limited partners, while with gross returns reference is made to all returns generated by the investments, without having yet deducted any costs.
From this it is possible to understand why the structure is known as 2/20 compensation structure: it is a reference to the percentages indicated above.
In any case, usually the contract between the parties states that before collecting the carried interest it is necessary that the investors have repaid, that they have recovered the paid-up capital plus a guaranteed minimum

interest rate, the so-called *hurdle rate*. Once this threshold has been reached, the so-called "*catch-up phase*" opens in which only the general partner collects profits to achieve the pre-set carried interest rate on the share of proceeds already realized (and distributed only among the limited partners) and, subsequently, we proceed to an 80/20 subdivision of the net profits, respectively between the LPs and GPs. If the hurdle rate is not achieved, the general partner's carried interest is void and the proceeds are entirely allocated to limited partners.

It is noted that a high hurdle rate produces a compensation incentive that discourages the general partners and causes them to undertake investments with a high risk, to be able to exceed this rate and profit from it. If the fund had previously made risky investments, it simply maintained its investment strategy, but if it was a low-risk fund, it implemented a "*style drift*" (Buzzacchi, Scellato and Ughetto, 2015), the general partner decided to partially change the type of investments, also to diversify the fund's assets. The evidence shows that more experienced managers do not change their risk-return strategy as they do not want to lose a reputation as investors do not see the issue very well; there is an exception if the market overperforms, the managers are more inclined to do so.

On the other hand, if the public ownership is less than 50%, and the financial market conditions are not favourable, and the general partners is performing poorly with respect to its historical returns, it is probable that it will drift towards more risky strategies.

It should be noted that depending on the size of the public quota there is an incentive or not to the drift.

The following 1.4 image supports to understand how profit sharing works among the players in a fund.

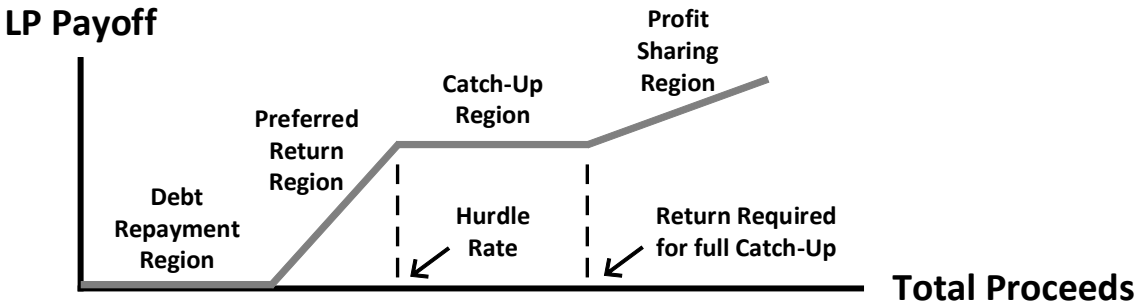


Figure 1.4 – Scheme illustrating the mechanism of carried interest and the profit distribuition between General Partner and Limited Partners.

In all of this, however, critical issues are not exempt: a fixed compensation scheme is compromised when the market returns are significantly lower than the general partner's opportunity cost.
It is therefore clear that it is not at all easy to create the right profit distribution and compensation mechanism and, even if it is possible to model them, there are many factors that can compromise them; it is enough to think that it is sufficient that the fund's performance decreases so that these structure result quickly destabilised; furthermore, it is difficult that the general partner always make the same commitment or that its level of risk appetite remains unchanged throughout the life of the fund as a deterioration in performance negatively affects remuneration.
Since hybrid funds generally invest in companies or sectors that are less profitable or in the early stages of the life of companies without positive cash flows, in order to avoid disincentivising private investors, managers' remuneration is much lower, which also explains why the public administration grants to private individuals concessions aimed at guaranteeing it on part of losses and on a minimum return or to recognize additional returns in the face of good performance, as anticipated in the last two schemes mentioned (downside protection and upside leverage).
The empirical evidence shows that hybrid funds favour investments that generate a return to the social level but also an intermediate positive economic return, certainly not extreme. The return on welfare is obviously null in case of write-off but positive in all the other cases, even with a possible exit: clearly it increases with the increase in investment performance, but less than proportionally to the financial return. It would also seem that for hybrid and private funds there is no overlap between sectors and/or segments of potential companies in which to introduce capital, given the different interests deriving from investments, therefore the public and private sectors do not hinder each other.
Finally, it is necessary to point out a distinction that is created: if the State establishes an *ex-novo* fund, in many cases, the governmental management company will be the general partner of the fund itself, instead, if the public administration decides to participate in already existing funds, the governmental management company will be the body-manager who will take the place and will control the quota held within this fund as a limited partner. In the first case the State is the general partner, through the specially governmental management company selected of a new fund

established at the state level; in the second case the State is a normal investor – limited partner – like the others, possibly private, in an existing fund.

Each fund has a lifetime divided into two parts, the first one is the investment window where the investments are made, followed by a disinvestment window where the fund liquidates all its shares within the various target companies and ceases to exist. The fund usually selects a set of companies in which it would like to invest, by creating a portfolio firms, and for each, decide how many investments rounds to make, i.e. how many cash flows to enter and how often (so-called round interval); generally there is an initial funding which establishes the entry of the target company in the fund portfolio and subsequent rounds of investment: the follow-on investment rounds. After each round the general partner assesses whether to continue to invest in that company by comparing the expected and actual returns and, if it is lower than the fund target, the financing would stop. Generally, each window does not last more than 5 years on average and every investment made does not weigh more than 15% of the total value of the fund.

A first difficulty is in assessing the investments made by hybrid funds, since these structures often have purposes that go beyond maximizing the economic profit.

The terminal value of the shares is determined by the success of each investment round as it is progressing along the investment window.

When the fund reaches the exit phase, the investments are liquidated, through the market or by abandoning them – sale or project abandonment – and the value of the shares sold is distributed among the limited partners and, once the agreed threshold is reached for them, also the general partner will profit, proportionally to its share and based on carried interest, respecting on average an 80/20 ratio between limited partners and general partners respectively.

This does not apply to so-called evergreen funds which do not have a fixed duration and the general partners of the fund can reuse the resources deriving from disinvestments to make new investments.

Chapter 2

The Impact – Oriented Funds

2.1 – The origin and the definition of social-impact investments

Impact investing is not philanthropy, charity or, in general, socially responsible investing, in fact it emerged because of failure of them to address social problems. Of course, the impact investing is one facet of the socially responsible investing spectrum, but they should not be confused. In fact, this kind of investment capitalizes businesses that potentially provide social or environmental impact at a scale that purely philanthropic interventions usually cannot reach.
Despite an impressive 15% annual growth rate, philanthropists did not make the world significantly better, safer, less polluted, healthier and so on; this because rich donors are disconnected from the real problems of the community. In addition, there are often changes of mind, organisations tend to change their mind, type of intervention and target of the same.

The impact investing, a sub-set of socially responsible investing (SRI), aims to solve these problems by allowing money to flow to local entrepreneurs who can solve local social problems in a sustainable for-profit way. These entrepreneurs are best located to understand local problems such as inadequacy of local education, lack of health care, poor food supply, access to clean water, affordable housing, access to credit and insurance etc.
Nevertheless, it is also important to recognize that not every socially inclined investment is an impact investment: impact investing targets companies that aim to create additional impact as the core of their business. In the same way that not all social-environmental investments are impact-oriented, not even all industries are able to undertake these activities – some avoid businesses involved in alcohol, tobacco, fast food, gambling, weapons, fossil fuel production and so on.

The important aspect is that these investments also bring an economic return, this is because generating return is important to attract money; vice-versa, invest in companies that are not expected to make money is like donating to charity.
Impact investors do not want a solution for one years, like most donators do, they want to invest in jump-start profitable businesses that will solve social problems year after year; only long-term sustainable solutions can move closer to a better society.

The aim of this chapter is to present impact-oriented funds often referred to as impact-investing, social-investments, social-impact funds or, more generally, with any combination of words concerning *impact* and *investments.*
They are nothing more than an evolution, at the operational mission level, of hybrid funds presented in the previous chapter, with the difference that in this case among the investors there is not necessarily the State, the participation can be only private, despite the goal of improving welfare remains. The basic idea, which also underlies the work of the hybrid funds, is that social growth stimulates the progress of the real economy.
The present discussion also allows to make a survey on the literature, often lacking, very fragmented and not exhaustive due to the novelty of this topics; it is in fact an industry still emergent and under-institutionalised that, in addition, develops in economic, cultural, political and social contexts that obviously change in every country.

Historically, the idea of linking economic return with a social outcome originates with the birth of the social impact bond (SIB); also known as “pay for success bond”, it is a financial instrument based on a pay-by-result (PbR) scheme with which the public administration collects capital from the private sector. The remuneration for investors is given by the State, which undertakes to pay a certain sum based on the achievement of certain social target.
The government hires an intermediary to broker the SIBs, the latter collects capital by selling the securities to the impact investors and, subsequently, transfers multi-year funding to one or more service providers that use these funds to complete their projects, satisfy the needs and deliver preventive interventions to a larger group of people.

An evaluation advisor monitors progress and works with the intermediary and the service providers to make mid-course improvements as needed; at the end an independent assessor determines the performance and how much the governments need to repay the investors. The latter will be repaid by government only if the interventions reach the fixed return level.

Not all interventions are approved to be funded with this type of bond, it is necessary to provide data that show that the actions to be taken bring meaningful results and, obviously, more total benefits to society than the existing programs that they replace. By shifting the focus to preventive programs that are judges on outcomes it is possible to transform the way of resolving age-old problems and the investors can make both social and financial return.

In a correctly model the basic idea is that thanks to private capitals, investments will be made which will generate savings for the State and therefore a usable margin to remunerate investors. These are large-scale programs that treat problems after they arise – so-called preventive interventions – partially implemented by non-profit[1] organisations that, however, fail to meet needs and solve all problems because of the limited resources they have.

The evidence shows that it is possible to achieve huge savings in public funds by preventing or intervening in the early stages of social problems, rather than managing the subsequent phases of crisis.

Technically they are not traditional bonds, they operate on a finite time horizon, but they do not offer a certain remuneration, since any profit for the investor depends on the achievement of certain social-environmental objectives; they therefore have a level of risk that is comparable to structural bonds or to real equity investment.

In fact, this particular bond exploits a mechanism that shifts the risk of a lower than expected financial return from the government to the social investors, since the investment is made with private financing and the yield is aleatory and depends on the final performance. Not achieving the pre-established result burns money invested and does not activate the return on capital.

The below image 2.1 helps to understand better the mechanism.

[1] In the whole elaborate the terms “non-profit” and “not-for-profit” are used in exchangeable way as synonymous. This must be pointed out as some subjects find slight differences between the two wording.

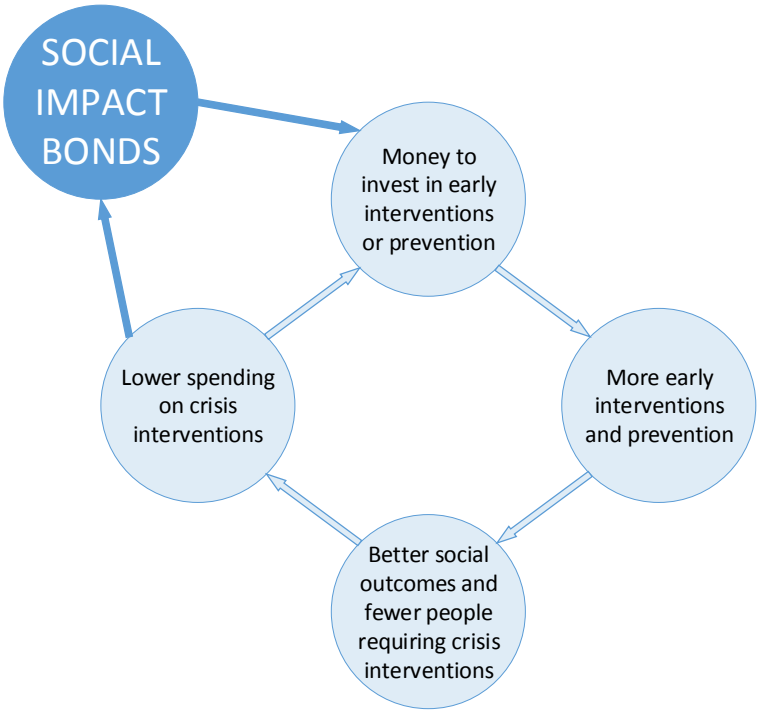


Figure 2.1 – Diagram illustrating the functioning of Social Impact Bonds.

The first social impact bond was created in Great Britain in 2010 by a financial intermediary called Social Finance Ltd. The social problem that inspired the birth concerned the British judicial system: it emerged that around 60% of short-sentence-prisoners were recurrent within a year; a decrease of this re-offending rate meant a reduction in costs and a consequent saving for the State. In fact, if the ex-prisoner, after having served his sentence, will not return to prison circuit, there will be a saving for public administration, both with respect to direct cost (fewer meals to provide, reduction of expenses linked to guaranteeing health and safety measures in the institute and so on), and indirect costs (lowering of the crime rate), up to higher tax revenue where the prisoner is permanently employed.

This initiative, held at Peterborough's prison, was a success; in fact, in 2017 the results deriving from this first bond arrived: it has not only reached the social objective object of the intervention, but it also allowed the full return of the invested capital and the distribution to the investors of a financial return – almost 3% per year.

Subsequently, also in the United Kingdom, during the G8 held in 2013, the Prime Minister David Cameron took advantage of the opportunity to host the G8 Social Impact Investment Forum, an excellent opportunity to

disseminate initiatives on a global scale. The Social Impact Investment Taskforce (SIITF) was also established, consisting of a public and a private representative for each country present at the event: each member state of this taskforce will have a National Advisory Board (NAB) whose job is to make and develop impact investments within the boundaries of their territory. For the record, it should be noted that the project involving the SIITF is terminated, but this body continues its work and it has been incorporated by the Global Steering Group for Impact Investment (GSG).
In the same circumstances of G8, the birth of the first Social Stock Exchange was also announced on the London market.
Since then also the OECD (Organisation for Economic Co-operation and Development) was charged with taking an interest in this, starting to draw up a report on the Social Impact Investment market, reason for which it can be said that this market is still in the early stage of development as it was created just 5 years ago.
The industry has also undergone further boost thanks to the Sustainable Development Goals (SDGs) issued in 2015 by the United Nations: these are 17 objectives that it is intended to achieve by 2030; they replace the Millennium Development Goals (MDGs) and aim to eradicate poverty and hunger in the world, reduce child mortality, fight multiple diseases etc.

Obviously, the results of these investments change according to whether the decisions and strategies are implemented at the international, national or local level; moreover, some initiatives can be successful in certain areas – also due to the current legislative and institutional context – and fail in others.

On a practical level, the definition of impact-oriented funds does not exist, therefore it is useful to adapt the definition of social impact investments (SIIs) provided by OECD in 2015:

"*Social impact investment is the provision of finance to organizations addressing social needs with the explicit expectation of a measurable social, as well as financial, return.*"

Social impact investments exploit funds, but not only, as channels through which directing capital towards specific objectives with the aim to generate social and/or environmental impact; the funds are in fact able to collect

large amounts of capital from many investors and to concentrate them in specific businesses with the aim of generating a measurable impact.
This type of investment has become very relevant in the last years as many governments were engaged on other fronts to stem the political and economic instability in the recent financial crisis, with a simultaneous worsening of social problems. The severity and diffusion of the most urgent social problems – just think of environmental issues, climate change, migratory flows, aging of the population etc. – far exceed the capacity of resources available to their resolution, not only philanthropic, but also public. This type of funds comes to the rescue of the paradox that has come to create: on the one hand the social challenges are growing, on the other the governments have fewer resources to devote to welfare, so there are more needs to be met but with a lower budget.
Just to understand the magnitude, the activity of funds, among the players, in the SIIs market is particularly relevant, just think that fund managers manage around 58% of the assets under management (AUM) of this industry.

The first international meeting regarding this type of investments was carried out in 2007 in Bellagio, Italy, by the Rockefeller Foundation. In the following years there were other initiatives aimed at promoting and spreading social impact investments: in 2009 J.P. Morgan, the aforementioned Rockefeller Foundation and the United States Agency for International Development founded the Global Impact Investing Network (GIIN), a non-profit society that deals with these issues worldwide and will be presented in the next chapter, in the origin of the data collected to build the database on which the next analysis will be carried out.

2.2 – Impact-oriented funds: role, structure and functioning

Impact investment funds play the same role as the investment funds in the traditional capital markets: they pool money from investors and then reinvest it in certain asset classes. It is important to anticipate that the funds and the organisations can dedicate themselves only partially to the impact investments: some of them may have a very small fraction of their AUM

dedicated to these investments while others will have the entire portfolio made up of sustainable investments.
A fundamental premise is that we must not confuse assets under managements (AUM) in this study with the capital used to make investments; the firsts represent the market value of all the financial assets that a fund or other organisation manages – either directly or through intermediaries. The investments, on the other hand, are the capitals previously collected and subsequently placed in the delivery organisations, usually in several rounds, during the participation of the fund in the projects of its investees.

These funds take different legal forms depending on the type of regulations in force in each country: in Italy, for example, they can be SICAV (Società di Investimento a Capitale Variabile), SICAF (Società di Investimento a Capitale Fisso), funds managed by SGR (Società di Gestione del Risparmio) etc. A social impact funds category that invests primarily or exclusively in equity of early stage companies is commonly called social venture capital.
The funds in question must meet social and financial requirement as long as normally there is a side condition or constraint; if the social return is maximized there is a financial constraint that requires that the fund reach at least a capital-preserving return. On the other hand, if the economic return is maximized, there is a social bond that imposes that the fund must be active within a certain social segment or deprived area. These conditions are known respectively as “Impact First” (financial constraint) and “Financial First” (social constraint).
The social investors, regardless of whether they make rational or emotional investments, are faced with innumerable difficulties in their capital allocation decisions; the main problems for them are the high fragmentation and a lack of transparency of the social sector as well as a lack of quantitative measures such as social impact or social value creation. Social impact funds collect and channel capital from investors to specific targets, called investee or delivery organisations from OECD.
This type of investments is innovative at least under two aspects: firstly, mostly private actors are involved, so the State does not always participate but rather there are also financial intermediaries, non-profit organisations, institutional and private investors. Secondly, this way of investing allows to obtain a social impact but also an economic return in order to satisfy both

the individual investor, who obtains a profit, and the community which benefits in terms of welfare. This is a circular report because empirical evidence shows that social growth in turn stimulates economic development.
Regardless of the structure and type, the fund acts by financing, directly or through an intermediary, the delivery organisations which, in turn, provide goods or provide services to certain beneficiaries. Figure 2.2 below shows the functional scheme without and with the presence of the intermediary.

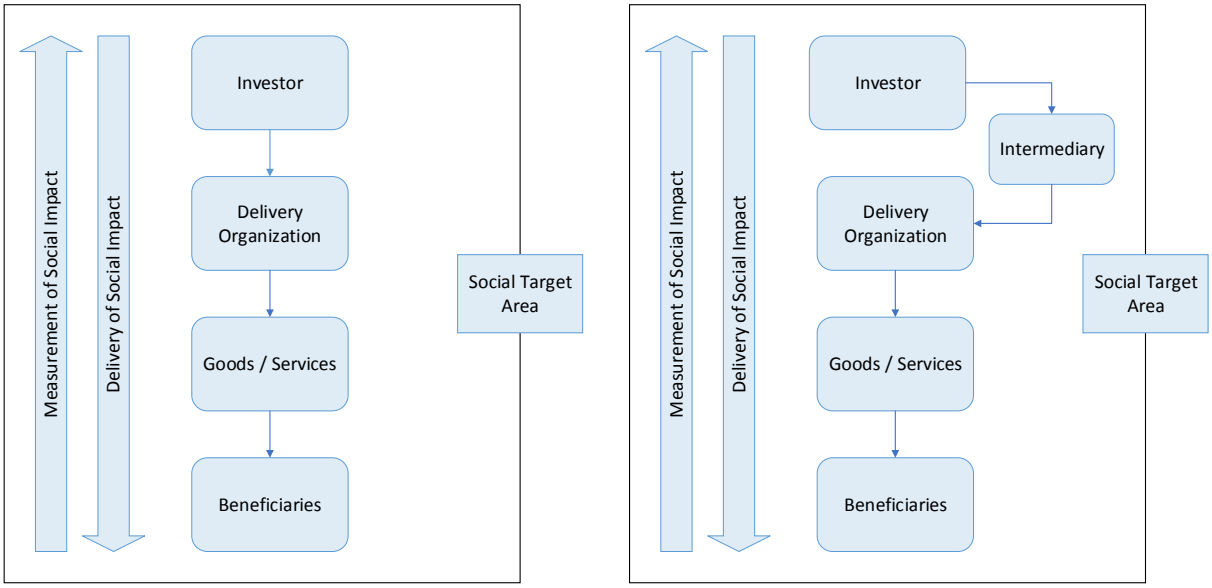


Figure 2.2 – Scheme showing the investment model, respecitvely without and with the intermediary.

Obviously, the investment is made with a specific intent that determines the social target area – i.e. health, education, financial exclusion and so on.
Finally, the funds must measure and report to their investors the social and/or environmental impact realized by the delivery organisations.

One aspect that is often misunderstood and deserves to be clarified is that these interventions are not only implemented in Third World countries but wherever intervention is needed, in emerging or developed countries; the idea is to improve the welfare of the community by helping the population at the Base of the Pyramid (BOP).

The main problem that we face when studying this type of investments concerns the lack of literature, due to the lack of publicly available data and the lack of maturity of the industry, therefore most of the analysis is carried

out thanks to the little information available, to study cases, interviews and surveys for individuals working in the organisations.
The birth of social-impact funds can be dictated by bottom-up or top-down needs; in the former, as the term suggests, the impulse that drives the birth of the fund comes from below: the recognition of a need or of a problem pushes the institutions for creating a financial vehicle to pool funds and invest money in organisations strictly involved in alleviating social constraints. In the second category of scheme, the top-down one, usually the most prudent fund managers recognize an increase in the demand for investments aimed at generating both an economic return and a social impact.

In both cases, through the appropriate consultants, it is still necessary to carry out a feasibility study concerning the fund, to assess how to look for potential investors and those who have the task of doing so.
Impact funds are established with precise characteristics, mission and aims achieved through an investment strategy. Depending on how they decide to invest, the funds can be grouped into:

- target social and environmental themes;
- target social or environmental outcomes;
- risk–return target.

The firsts, as can be easily understood by the term “themes”, invest in certain areas or sectors depending on the problem and the topic dealt with – education, health, social inclusion and so on; therefore, it can be said that the target is a specific “social theme”. The seconds has as aim the result, for example the reduction of a certain percentage of homeless, the lowering of the unemployment rate by a certain percentage etc. The last category contains funds that act based on a certain return, within a certain risk or volatility.
The investment strategy of social-impact funds must consider several elements (Chiappini, 2017):

- target countries (developed or emerging countries);
- social target area (for example aging, disability, children and families, safety, education, unemployment etc.);
- target investees: they should have an external certification of social impact or have fixed specific legal clauses that help to maintain the

social mission intent (i.e. small or medium enterprises, non-profit or for-profit enterprises);
- target beneficiaries (i.e. at-risk population, as defined by the OECD);
- investment mechanism (direct or indirect);
- goods or services to furnish: consumption of a good or service improves individual or society life outcome and obtains saving in social costs and/or improvement in efficacy);
- asset class (i.e. equity, fixed income, real estate);
- investment diversification (i.e. maximum size, instruments, maximum exposition to sectors/countries);
- management currency risk (i.e. local currency, hard currency, hedged or unhedged);
- maturity of instruments;
- exit strategy;
- return expectation (i.e. the fund should state the purpose of obtaining the pay-back of capital or a rate of return that does not exceed the risk-adjusted market rate of return);
- social or environmental measurement;
- investment process (bottom-up or top-down).

The features listed above may relate to the entire fund or only some of its compartments, the so-called sub-funds.
Mechanisms of governance mission lock should also be desirable to safeguard the social and environmental purpose of impact-oriented funds; normally are also decided the fees for employees and managers, the minimum investment size, frequency in which the net asset value is made available, the frequency of reporting social and financial performance and target investors.

Social impact funds have potentially two types of capital structures: the *plain vanilla* funds and structured funds; in the former, as in the *pari passu* scheme, all the investors enjoy the same rights in terms of profits and losses, in proportions to the shares, of course. In the structured, also called layered funds, the investors are not all the same but can buy shares with different risk-return-impact; this structuring of the capital proves to be very useful in this type of investment because it allows to attract public and private investors with a different profile: public investors or investors with high impact inclination – for example foundations, development agencies – they

will opt for quotas with bigger social impact and a higher risk, while private investors will balance the risk-impact pair, without neglecting the return.
The fund's capital is divided into several tranches with different degrees of risk and seniority; usually these tranches, from the least risky to the riskiest, are called: notes, senior, mezzanine and junior.
The participation in revenues and losses follows a defined waterfall structure: the revenues are given first to the safest tranches and gradually to the others; reverse order is employed in case of losses or bankruptcy. However, the owners of notes do not participate in losses.
This type of funds has been divided in three categories, classifiable as follows: commercial, non-commercial and quasi-commercial funds; the former generally have a plain vanilla capital structure where all the investors are on the same level, the units are object of private placement but the information about the net asset value (NAV) is in the public domain, typically shared on a monthly or quarterly basis. The investors can decide at any time to subscribe or redeem the fund shares. This category is the less numerous due to the limited and conditioned demand of institutional investors interested in the subscription of financial products with good and stable returns as well as limited risk.
Non-commercial impact-oriented funds are usually promoted and owned by institutions that tend to give high priority to social impact over financial performance, as for example philanthropic organisations, foundations or government agencies; in this case the information on the NAV is not shared externally. The fund units may all have the same level of risk-return or there may be a leader institution that guarantees first-lost tranches (cf. downside protection scheme). It should also be added that they can be structured as revolving funds, where loan repayments are reinvested in new financing.
Finally, quasi-commercial funds are typically organized as structured funds with first-loss capital owned by public entities and the other tranches are in the hands of other investors, generally private. Usually the units of these funds are sold through a private placement and the information on the NAV is reserved.

2.3 – Risks and problems connected to social-impact investments

Given the novelty of the sector, many aspects are still rather blurred and undefined; investors, regardless of whether they care about the impact or the financial side, want to know both the risks and returns they are facing. They will decide to channel their capital into funds with the best combination of social and financial risk and return.

According to a study by Barby and Gan (2014) the investors can find 5 types of risk in the social-impact industry:

- capital risk: it is defined as this the risk to lose the invested capital;
- exit risk: the risk of not being able to disinvest, being investments typically illiquid, non-transferable or transferable only in certain time;
- transaction cost risk: this is a cost concerning the money and the time spent in non-profitable activities such as due diligence, formalization of agreements, monitoring of investments and so on;
- impact risk: it is the risk that an investment generates a positive impact for a group of people and a negative impact on others;
- unquantifiable risk: it is the risk of unpredictable events that do not fall within the previous categories.

Also in the impact area, one of the main advantages is the diversification of the risk that is obtained by investing in funds, to the detriment of what instead would happen by making targeted investments in individual target companies. It should however be noted that in this industry the potential benefit of portfolio diversification is dampened due to the concentration of asset types, especially in some geographical areas. A possible solution to this problem is a sectoral or geographical diversification: for example, a fund that invests in a specific geographical area could protect itself by spanning multiple sectors; by contrast funds dealing with specific industries can diversify investing in many countries. Further diversification can be achieved by investing in a combination of asset classes with a different volatility, for instance investing in private equity can show higher level of risk than funds investing in fixed income.

The investments made in this industry are defined as patient having a relatively long duration if compared to investments made by private equity funds for purely speculative purposes; they are also investments with a low level of liquidity, redemption of shares is contractually fixed, and a secondary market of shares rarely exists due to the not frequent listing of impact funds. The investments in general, not least those made in the social-oriented funds, also suffer from credit risk, market risk and interest rate risk. One type of risk present in the less known and more static sectors is the illiquidity or exit risk: the risk of not being able to sell their shares – and therefore to disinvest – due to the high illiquidity not only of the sector but of private equity in general. Country and currency risks are also very important, the first being the economic and political stability of the country in which it is invested, while the second is linked to the currency in which the investment is made. A risk that deserves special attention, since it is very common in the impact-investments, is the so-called 'business model execution and management risk': the investors fear that the fund or the organisation in which they have invested may decide to change strategy and *modus operandi.*

Further risks worth considering are the social or environmental risk and the reputational risk. The first, for the treatment made in this paper, is considered as the probability that the social or environmental impact is lower than expectation due to unpredictable events concerning the activities carried out by the delivery organisations or the life of end beneficiaries. The social risk can be measured as the probability of a return below expectations and in terms of social value at risk: unexpected reduction of social impact at a given probability level and in a defined time frame. The reduction of social impact is measured as difference between expected and realized social impact.

Reputational risk is a risk arising from multiple events such as unethical operations or scandals involving actors actively participating in funds – e.g. limited or general partners, fund's managers, investee organisations and so on. The reputation and the related risk are very important aspects, but the literature has not yet deepened the subject much because of the immaturity of the industry in question and the few data available. The logic would make sense the presence of a positive correlation between reputation and ability to attract capital from investors.

Other problems in this regard are the lack of a pipeline of investments, there are not enough social enterprises and businesses that are ready to accept these types of investments, maybe because of a lack of mentorship, education or business plans; secondly, many investors, especially the institutional investors, require a history of financial success and impact investing is still a fairly young market so there are not a lot of funds and investment vehicles that have that required history.

Moreover, the connections between the subjects of the system are lacking: there are investable companies out there, but the challenge is putting those deals together; there is not enough people working at that intersection of connecting the people who need the finance with people who can provide it.

A further big issue is the lack of support and regulation – in some cases absent – by governments, which certainly slows down and hinders the growth and development of SIIs market.

There are some tricks and improvements that would probably make it possible to increase the size of this industry as well as the challenges for the more immediate future: first, the creation of a common basis in terms of terminology and definitions; in a rather fuzzy and sometimes chaotic phase like the current one, the lack of common understanding constitutes an important obstacle. Secondly, the creation of databases and track records, together with greater involvement of the institution through greater regulation, would facilitate not only investments but would encourage potential investors to make their capital.

It should also be noted that at the moment there is a lack of capital to finance certain investments with extreme risk-return values; in fact, the investors are very reluctant to invest with little or no track record, in specific sectors or geographical areas as well as in organisations with untested business models.

Finally, the lack of adequate and unambiguous tools for impact measurement contributes to fostering confusion: the investors find it difficult to compare investments strategies of different organisations if they do not have the same metric – or do not present any – for the measurement of social-environmental impacts; suffice it to say that some organisations today still do not use any tools for measuring impact.

All of this, together with the lack of cooperation between the various players present in the impact investing industry, means that there are large

barriers to entry and considerable difficulties not only for the efficient allocation of existing capital but also for the influx of new ones.
The solutions will surely be seen as the speed with which the technological sector evolves, and some help can be found in the application of big data or in the blockchain. An example of government aid could be participation in hybrid funds, perhaps with an adequate protection scheme – cf. downside protection and upside leverage schemes of the first chapter – in order to encourage investors to participate, which is essential in a rather illiquid market such as that of private equity.

Perhaps the most significant risk of this industry, which deserves further study, is called "impact washing": first of all, there is the risk that an organisation adopts the label of "social-impact" without however showing a marked relevance and this will take the investor to a risk of mission drift or "impact dilution". Moreover, the risk is that of incurring in a real "dilution", if indeed all the organisations that also have a minimum social-environmental feedback start to promote their investments as impact, in the end the true meaning of this will be lost. Therefore, a bit of radicality and selectivity is needed in this area; the most critical say that if intentionality is lacking, it is not a matter of impact investments but of positive externalities. In addition to the intentionality, measurability and additionality must be present; with this last term we intend to invest in areas where canonical intervention mechanisms do not work, especially in the under-capitalized sectors. If an investment enjoys all three features mentioned above, it can be considered as having an impact.

2.4 – Tools, frameworks and criteria to measure social and environmental performances

One of the most important issues is the lack of information to non-professionals, especially a common yardstick that makes it possible to compare the various social-impact investments; the possible solution to make this comparison is to measure the impact that comes from investments, throughout their lifetime. Measuring performance is the fundamental prerequisite for any organisation that intends to pursue its objectives and is also a synonym of responsibility towards its stakeholders.

In fact, only by measuring results over time it is possible to evaluate progress in terms of value creation and it can be also possible to consolidate its own mission.
This need for measurement is above all dictated by practical needs: first, evaluating the social return of one's investments benefits in reputational terms for the entire fund or organisation and, secondly, facilitates potential and doubtful investors to choose a company certified rather than one that is not. So, the advantages are in terms of reputation and appeal to capital. The problem is that the indicators of risk and economic performance are all like those of the other sectors but measuring social and environmental impact is something completely new and certainly not simple.

In 2009, after the birth of GIIN, the first attempts of standards for impact measurement, designed specifically for industry, were presented: Impact Reporting and Investment Standards (IRIS) and a rating system known as the Global Impact Investing Rating System (GIIRS); they work precisely on standardizing the ways in which organisations can communicate their performance, favouring comparability between investments and any benchmarks, providing measurable indicators.
IRIS, even if it includes some output measures, is mainly focused on financial and operational measures; GIIRS is a rating system based on surveys that cover 5 topics: leadership, employees, environment, community and products and services.
The limitation of these two systems is that they continue to think about output, considering the number of products sold or services provided, or the people reached, and not with a focus on the social outcomes generated: highlighting the significant changes in the life of the communities reached by these investments, i.e. the long-term positive impact.

IRIS, developed by GIIN, is a catalogue of the main indicators used to measure social, environmental and economic impact. It is an analysis tool whose main purpose is to develop a type of reporting that allows comparability between the various organisations of the industry; on a practical level, it is a collection of measurement standards that make it applicable between sectors, geographical areas and even very different asset classes. At the moment more than 5,000 organisations use this tool and, the latest edition of the catalogue version 4.0 released in March 2016,

includes over 40 types of measurement standards in a range of 559 different guidelines and metrics – quantitative and, the most, qualitative.
The five sections in which the metrics that make up the entire catalogue can be divided are given as information:

- financial performance;
- operational impact;
- organisational description;
- product description;
- product impact.

As it is easily possible to see, IRIS includes a series of sections that allow to provide an overview of the status of any organisation.
Access to the catalogue is completely free, it is sufficient to register at the official site to have free access; this implies that no certification is issued if you decide to follow these metrics and standards, but it is possible to say that we adopt these criteria, which is obviously a plus in the relationships between the various organisations.
The problem is that of all the metrics present – over 500 – the user should select a subset that best meets his needs and those of the organisation for which he is perhaps doing the evaluation; this means that the comparability between the results of the IRIS users is more theoretical than factual. Furthermore, none of these indicators measures an outcome, which makes it impossible to measure the actual impact: many critics say that these metrics do not help comparisons between different projects and indeed support more social reporting than the actual impact measure.

To facilitate comparability, which is unfortunately difficult and cumbersome with IRIS metrics, GIIN has encouraged the development of Global Impact Investing Rating System (GIIRS), a rating tool that assigns values to organisations and funds in terms of impact, with an approach like that of the usual rating systems. It was developed by B Lab and is a system designed to assess the social and environmental impact of those who require certification; it is an annual index that uses IRIS data in addition to other criteria in the process of assigning a rating to the actors examined. The score – which can reach a maximum of 200 points – takes in to account the structure of corporate governance, the treatment of workers, the impact on the environment, the role in the community and so on. The common problem with IRIS is that these metrics are overly focused on the investor

and little on the recipient of investments and "*this leaves the field of social-impact investing vulnerable to false claims of social impact and the potential for significant mission creep as standard financial performance measures come to trump more uncertain and costly nonfinancial ones*" (Salamon, 2014).

For the sake of completeness, some other indicators, rules and types of reports found during the research carried out are also mentioned; they are less important than the two just investigated because they are also used in other fields, therefore not properly designed and customized for the social-impact industry. Moreover, with the exceptions of the first two, the others do not concern only this industry but rather all the ethical finance:

- B impact assessment: it is owned by B Lab, the same organisation that created GIIRS; they are based practically on the same basis metrics, those of IRIS. At the present 2,655 companies, in over than 150 sectors, in 60 countries enjoy this certification;
- PRISM (Portfolio, Risk, Impact and Sustainability Measurement): it is a platform developed by Intellecap which aims to evaluate the impact-funds and portfolios they have formed, especially in India; it is also exploits IRIS metrics and the performance assessment of funds is carried out through the so-called FSIC Score (Fund Sustainability, Intent and Contribution Score) while the performance of a portfolio is instead calibrated using the PIA Score (Portfolio Impact Assessment Score);
- ESG Criteria (Environmental, Social and Governance Criteria): these are guidelines aimed at improving all aspects of sustainability, ethics and governance in an organisation;
- GRI (Global Reporting Initiative): it is a non-profit organisation created with the aim of creating a report on the sustainable performance of organisations of any size, belonging to any sector or country;
- United Nations Global Compact (UN Global Compact): it is a United Nations initiative designed to encourage organisations around the world to adopt sustainable policies that respect corporate social responsibility and to report on their implementation;

- International Integrated Reporting Framework (IIRF): they are also a series of guidelines to enable various organisations to create reports that can properly integrate financial documents;
- Principles for Responsible Investment (PRI): they are six principles, supported primarily from the United Nations, that provide standards to responsible investments and activities;
- SROI (Social Return on Investments): it is a formula more like the economic ones for measuring extra-financial value; there is not just one version, some say that it is the ratio between social benefits, net of costs, and costs to reach them. Others further multiply the numerator for the likelihood of success;
- Social Accountability 8000:2014: it is an international standard that certifies some aspects of corporate management regarding corporate social responsibility – hence the whole issue related to Corporate Social Responsibility (CSR).

2.5 – The current world scenario

Given the innumerable difficulties and the lack of public information, the only way to achieve a global overview of the social-impact industry is the analysis of a document called *Annual Impact Investor Survey*, prepared annually by GIIN; the 2018 edition, published in June, is the eighth and is based on surveys to which 229 of the world's leading impact investing organisations, including banks, foundations, pension funds, insurance companies, fund managers etc. have responded. Certainly, the fact that we have reached the eighth edition allows us to make analysis and in-depth analyses that need a historical series, such as the study of trends – 82 subjects, in fact, were already present in the survey of 2014 and it appears that they have expanded their assets under management of even 13% per year.

For a better understanding, see table 2.3, the legend of the acronyms adopted by GIIN, noting the subdivision of the region markets into "developed" and "emerging".

The images in this paragraph were taken from the report published by GIIN for the Survey 2018.

The first significant number is that 226 respondents – 3 subjects did not provide their AUM – manage overall over USD 228.1 billion in impact investing assets, which makes the idea of the current size of the SIIs market, while recalling that such data derive from a sample that obviously does not coincide with the population of origin.
It is very interesting to summarize the geographical statistics, the sectorial statistics,
the tools in which the respondents invest and the degree of maturity of the companies in which they invest the most.
At the geographical level the 47% of subjects have the headquarter located in the United States and Canada, and 30% in the so-called WNS Europe (Western, Northern and Southern Europe).

Code	Name of region
DM	Developed Markets
East Asia	East Asia
Oceania	Oceania
U.S. & Canada	United States and Canada
WNS Europe	Western, Northern, and Southern Europe
EM	Emerging Markets
EECA	Eastern Europe, Russia, and Central Asia
LAC	Latin America and the Caribbean (including Mexico)
MENA	Middle East and North Africa
SE Asia	Southeast Asia
South Asia	South Asia
SSA	Sub-Saharan Africa

Table 2.3 – Regions subdivision and their abbreviations.

As can be seen from the image below 2.4, more than half of the assets under management – about 56% – are allocated to emerging markets, the remaining part in developed markets, including the "Other" category; in first place are the United States and Canada, with a 20% share, followed by LAC (16%) and SSA (12%). On the right side of the image it is possible to see the

detail of the percentage of respondents with any capital allocated to each geography.

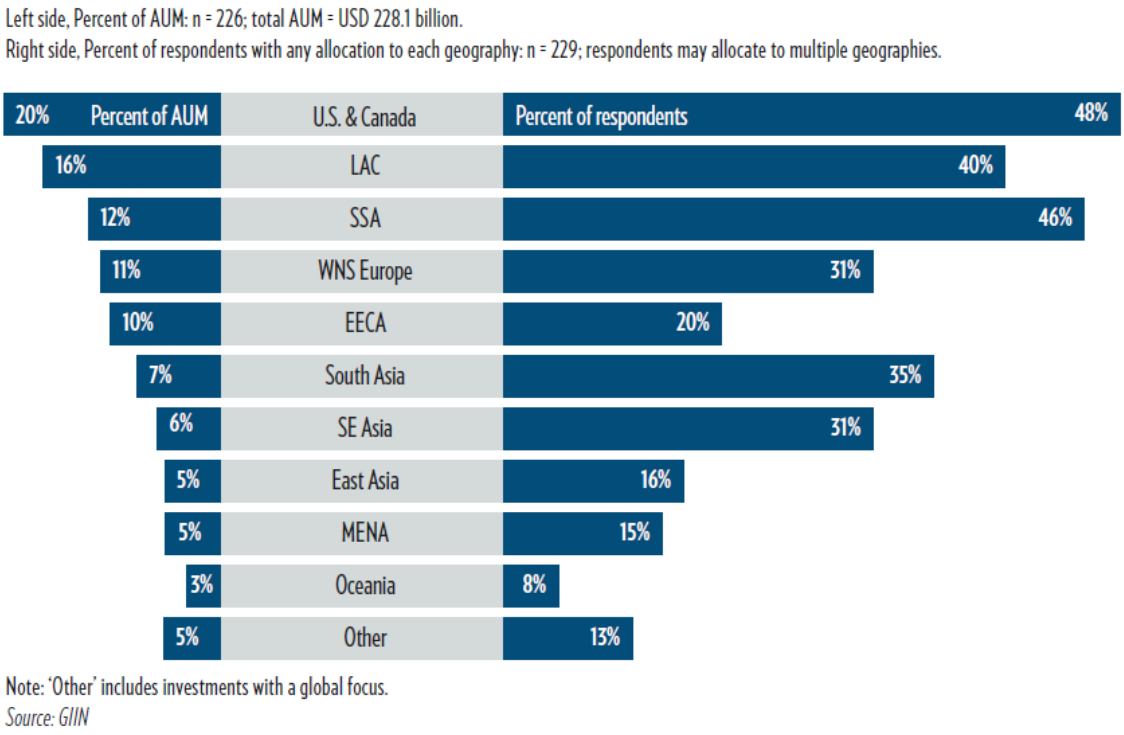


Figure 2.4 – Geographic allocations by AUM and percent of respondents.

As for the sector, on the other hand, the investments made by the organisations that responded to the survey are mostly focused to financial services (excluding microfinance), energy, microfinance and housing (note: WASH stands for water, sanitation and hygiene). The 57% allocates at least some capital to food and agriculture, more than to any other sector although it accounts for just 6% of total asset allocation. The sector that collects more capital is the one concerning financial services, with 19% of dedicated AUMs. It follows, with 16% the category "other" which includes several sectors, ranging from the development of SMEs (small and medium-sized enterprises), through the protection of forests and tourism to child welfare. What has just been introduced is visible from the image 2.5.

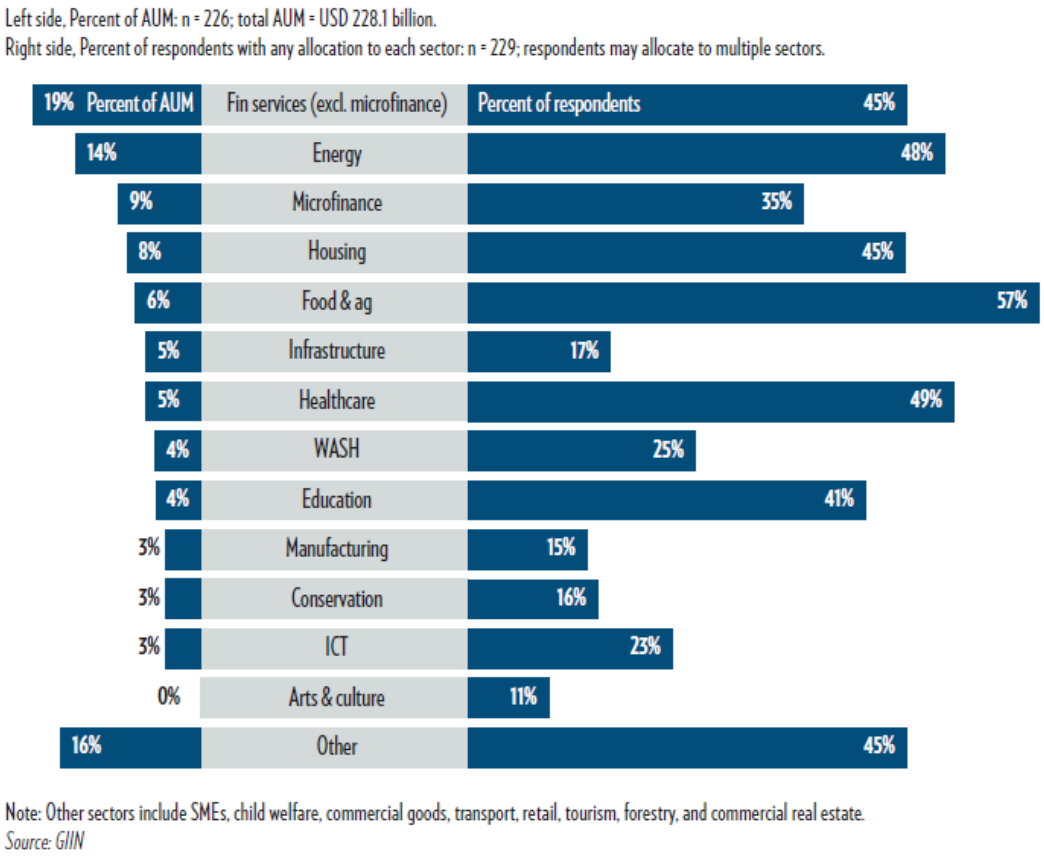


Figure 2.5 – Sector allocations by AUM and percent of respondents.

Regarding the asset class in which these organisations invest, there is an overwhelming predominance towards private debt (41%), followed by private equity (18%) and public equities (14%).
At the corporate maturity level, 39% invest in private-mature companies and 35% in growth-stage companies; however, it is demonstrated that several investors – around 11% of the total – allocate small amounts of capital into seed and venture-stage companies.

In 2017 alone, these entities have invested USD 35.526 billion into 11,136 deals and plan to increase the two values, respectively, by 8 and 5% for the current year. A noteworthy figure concerns the 82 organisations for which we also have the results of the 2014 survey: they increased the amount of capital invested that year by 27% and the number of deals made by 32% with a compound annual growth rate (CAGR) of 13% for the collective AUM, growing from USD 30.8 billion in 2013 to USD 50.8 billion in 2017; the invested capital rose from USD 6.1 billion to USD 8.1 billion, an increase of almost 33% in just 5 years.

This general growth took place at the geographical, sectoral level and about instruments: the geographical areas most affected by the investments are East and South-East Asia, MENA and Oceania; the sectors in which it was decided to increase investments were education and food & agriculture, while the asset class in which there was the greatest expansion was public equity. This is a very important fact because they are areas and sectors that have historically been little considered at the level of private investments: this is synonymous with a strong expansion both vertically, among the countries, and at a cross level between the individual sectors. Of course, private investment must be distinguished from humanitarian aid provided by non-profit organisations, charitable organisations and so on.
An additional fact that should be provided relates to the performance – on impact and financial – of these investments: on the impact side, the 97% state that their investments are in line or even outperformed, the remaining part (3%) underperformed; at the financial level instead, 91% state that investments have at least met their expectations, only 9% have underperformed.
In terms of financial return, 64% of respondents prefer risk-adjusted target market-rate returns while the remaining part (36%) target below-market returns, and, in detail, 20% targeting returns that are closer to market rate and 16% seeking returns closer to capital preservation.
What has just been said is visible from the 2.6 image-graph.

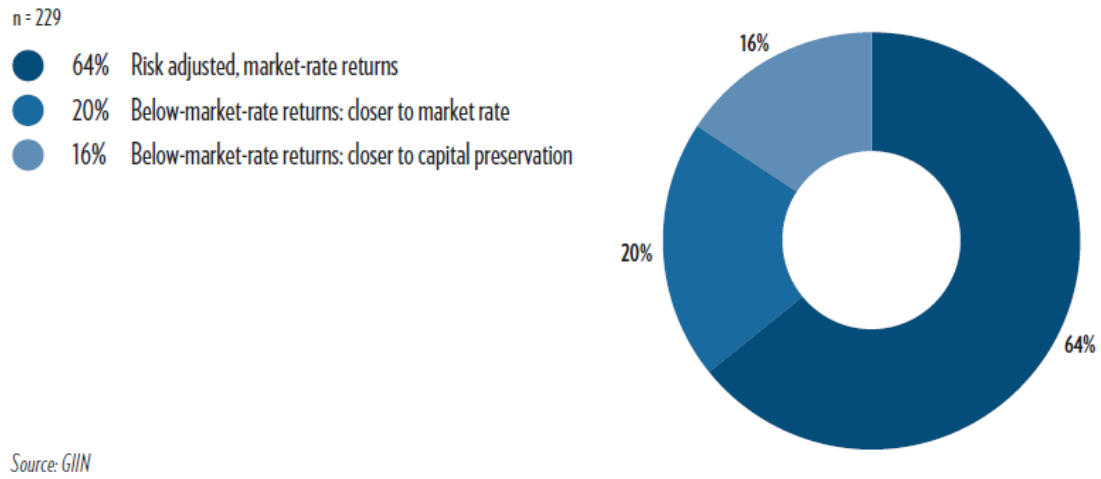


Figure 2.6 – Target financial returns principally sought.

As far as the level of investments is concerned, one can see from the graph in image 2.7 an increasing trend, as shown by observing the orange curve, which represents the cumulative number of organisations that realize impact investments; a very relevant figure is represented by the 37 organisations – over 16% of the sample – who have been implementing impact investments for over 20 years.

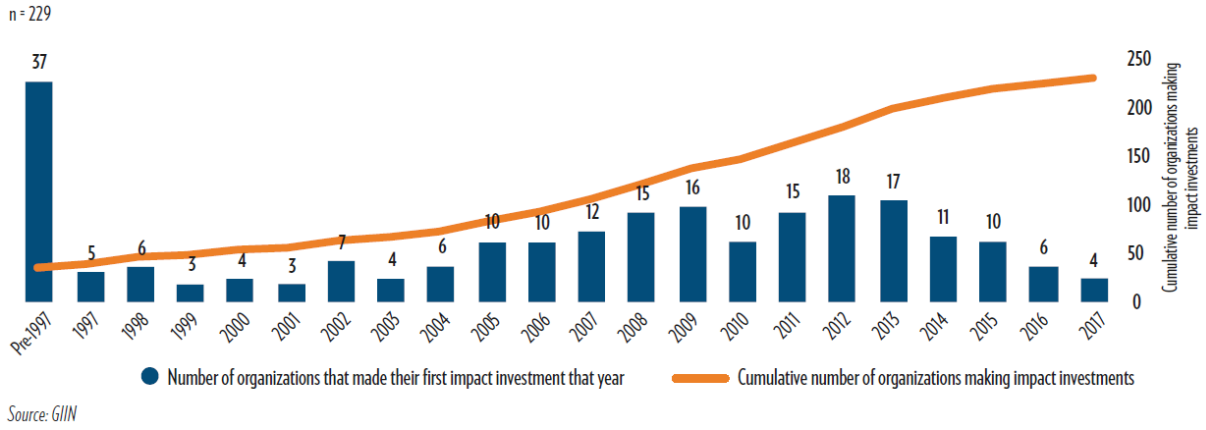
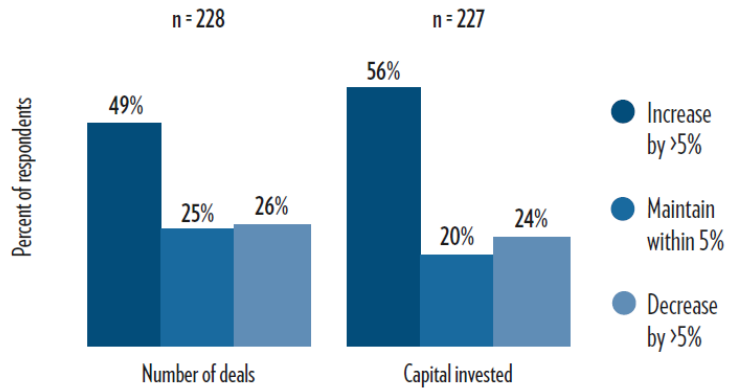


Figure 2.7 – Detail of the year of the first impact-investment of the GIIN sample organisations.

Speaking of investments, about two-thirds (67%) realize solely impact-investments while the remaining part, in addition to the latter, also carries out conventional investments; about the detail between developed and emerging market 85% of organisations which is emerging-focused realize only impact-investments, while among those developed-focused "only" 55% of investors do so.
As regards to the sub-sample of 82 subjects who also responded to the 2014 questionnaire, they have a greater share of only-impact-investments: 77% (versus 67% of the full sample).

Overall, from their foundation, the subjects of the sample have invested USD 447 billion into 333,687 deals and, despite the growth, this trend seems not to be going to fade, since the survey shows that about 50% of the sample intends to increase – at least 5% - the number of deals and the capital invested in the current year, as summarized by image 2.8.



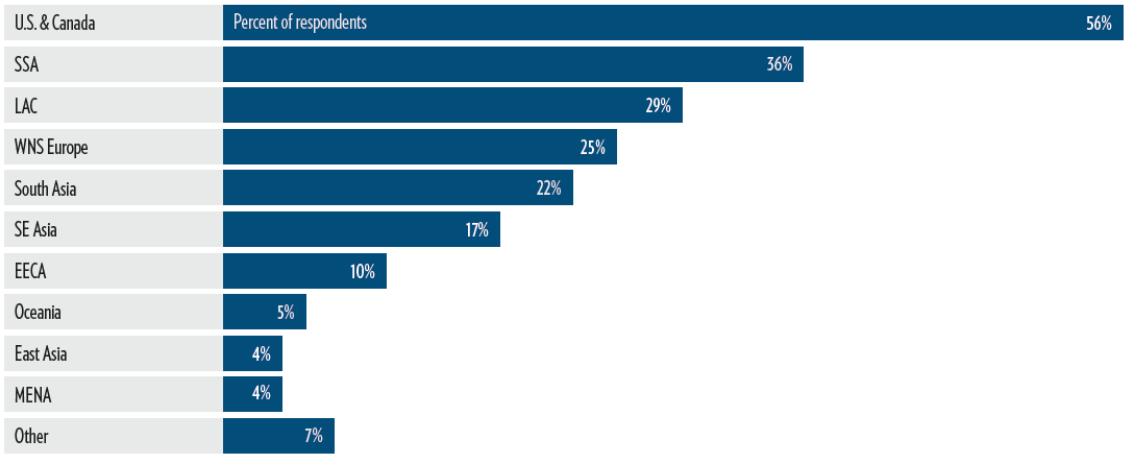
Note: Excludes one respondent that did not report number of deals and two respondents that did not report capital invested.
Source: GIIN

Figure 2.8 – Number of respondents that plan to increase, maintain, and decrease their level of activity in 2018.

The most active subjects are the banks and diversified financial institutions having reported the highest median amount of capital invested and deals; moreover, according to the forecasts, they show the highest expected growth among all investors of the impact industry.

As conclusion of this global overview, the details of the target investment areas in 2017 are shown: image 2.9 summarizes the top three geographies in which the organisations have contributed their capital. As already anticipated at the beginning of the chapter it is not surprising that as many as 56% of respondents indicate "U.S. & Canada" among the first three areas in which it has made funding: despite what one might think, there are many social and/or environmental problems even in the so-called First World countries.

n = 220; showing percent of respondents that listed each geography in their top three for capital deployments in 2017. Optional question.



Source: GIIN

Figure 2.9 – Top three regions to which respondents deployed capital in 2017.

Out of 229 subjects, 136 are fund managers – about 59% of the sample – and account for 32% of the total AUM; 79% of this sub-sample is identified as for-profit, while 21% is non-profit. The remaining 93 organisations state that, on average, such managers have very similar competencies compared to conventional fund managers.

In the year 2017 alone, fund managers raised approximately USD 18.7 billion, a figure that weighs heavily in favour of for-profit entities: median capital raises of USD 52 million versus USD 22 million. For the current year, the expectation is to collect around USD 22.5 billion, an increase of 20% over the previous period. In addition, the developed-market-focused fund managers raised three times more capital at the median than emerging-market-focused, this suggests, as already anticipated at the level of literature, that this type of investment is not just targeted towards the Third World countries, indeed the data show the opposite. Market-rate fund managers raised over four times as much at the median as did below-market-rate fund managers.

What has just been said is summarized in table 2.10 below.

Excludes respondents that did not report raising capital in 2017 or did not share their projections for 2018. All figures in USD millions.

		Headquarters locations				Geographic focus				Asset class focus				Target returns			
		DM-HQ		EM-HQ		EM-focused		DM-focused		Private Debt		Private Equity		Market-Rate		Below-Market	
		2017	2018P	2017	2018P	2017	2018P	2017	2018P	2017	2018P	2017	2018P	2017	2018P	2017	2018P
	n	76	91	16	19	45	58	41	46	31	36	19	24	64	80	30	33
AUM	Median	140		43		81		179		99		89		227		64	
Capital raise	Mean	236	225	34	70	55	132	373	289	71	144	153	131	277	261	33	50
	Median	37	75	13	32	20	52	60	80	27	28	30	75	51	100	11	20
	Sum	17,966	20,477	538	1,325	2,461	7,630	15,291	13,311	2,215	5,195	2,912	3,149	17,749	20,841	989	1,649

Source: GIIN

Table 2.10 – Fund manager capital raises in 2017 and plans for capital raise in 2018, by sub-group.

It is interesting to conclude the analysis by looking at the details of the capital managed by the fund managers: overall, they have USD 71.9 billion – 32% of the total, as anticipated; 70% manage at least some capital from a family office or HNWI (High Net Worth Individual), 65% have at least one transaction from a foundation and just under half (49%) have capital of banking origin. Image 2.11 makes the idea of what has just been said.

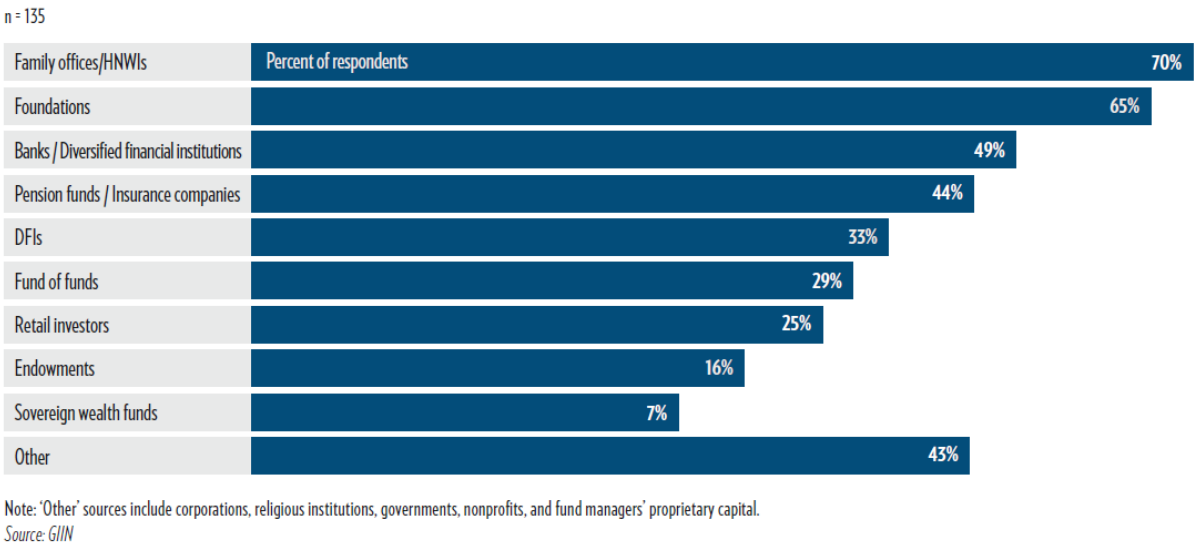


Figure 2.11 – Proportion of fund managers that manage capital from each investor type.

What emerges overall is that although this industry is quite new, investments with a social impact are not new, the most immediate consequence of this is that the target areas of investments can be expanded to cover more and more the range of problems and socio-environmental needs.

In general, it can therefore be said that the survey data show a strong momentum in this industry and the involvement of an increasing number of organisations and individuals; it should not be surprising how most of them have shown a growth trend in the implementation of social-impact investments: growth that involves an expansions towards new geographical areas, new sectors and that includes companies across many stages of development – from venture-stage to mature-stage companies.

2.6 – The Italian situation

The strong tradition of mutual credit, the high number of organisations in the tertiary sector and a per capita share of philanthropic capital among the highest in Europe, mean that the Italian context is particularly predisposed to the development of investments with a social impact. The problem is the slowness with which the country adapts to changes and innovations: just think that Italy began to take an interest in this issue in 2013, when it was invited to participate to the Taskforce G8, almost a decade later than UK and USA.

These investments represent a substantial novelty on the national scene, this is further confirmed by the response rate received by Tiresia[2], to a survey aimed at almost 1,400 organisations carried out between 2015 and 2016: only around 8% responded and, of these, 60 have declared to make investments with a social impact, but only half have turned out to be actually such, respecting the due criteria.

As of today, the scenario concerning the impact investing in Italy is in a phase that is little more than embryonic and has no characteristics and consistency such as to allow a classical empirical survey; not a different situation arises in other countries in European Union, since that the latter has introduced and regulated a type of funds, labelling them "European Social Entrepreneurship Funds" (EuSEFs), in Regulation (EU) No. 346/2013 of the European Parliament and the Council (the "Regulation"), then a few years ago.

The funds that are part of it are obviously characterized by a core business that is both target social impact as well as financial returns.

This Regulation establishes and governs the information deemed to be minimal that should be shared with investors, as potential conflicts of interest, for example.

The total failure of this Regulation has led the European Commission to its forced re-interpretation since in April 2016 only 4 funds could boast EuSEF's label. From all this it emerges therefore that the backwardness in this

[2] Tiresia – Technology and Innovation REsearch on Social ImpAct – is the research centre on innovation and finance with social impact of the School of Management of Polytechnic University of Milan.

industry is not just about Italy but rather, with some exceptions, this situation is still the rule in most European countries.

Unfortunately, if it is difficult to make a global overview this is also true and even more for a possible detail at national level; the fragmentation, the paucity and the confidentiality of the data makes any kind of study impossible. It is even difficult to find just the names of the national funds that have decided to undertake this innovative type of investment; from the data of Tiresia it emerges however that the funds are few, many are organisations of various kinds that undertake, among others, also investments with a social impact.
An estimate of Tiresia dating back to last spring states that in Italy at the moment there are around EUR 210 million – which could reach 400 within three years – in AUM dedicated to strictly impact investing in the strict sense of the definition, 23% allocated in debt and 77% in equity. This figure rises to EUR 1.5 billion if the sphere is extended to include anything in the "impact" category, up to EUR 6.5 billion if "almost impact" investments are also included, including a part of sustainable finance, a sub-set of ethical finance.

For the record, however, some fund or organisations that publicly shares the results must be mentioned: this is the case, for example, of the company Oltre Venture, owner of two funds – Oltre1 and Oltre2 – the first dates to 2006 and is the first Italian fund dedicated to impact investing.
A significant contribution also derives from the work of Social Impact Italia, an investment platform jointly sponsored by Cassa Depositi e Prestiti (CDP) and by the aforementioned European Investment Fund (EIF); its goal is to promote the development of social finance within the Italian market.
It should also be mentioned "Social Impact Agenda for Italy" the body that had to collect the legacy of the Italian National Advisory Board and continue its work; it was born in 2016 after its predecessor has worked uninterruptedly since the G8 of 2013.

2.7 – Conclusion on social-impact industry

This industry is certainly young when compared to other historical branches of private equity; it is however undeniable that its evolution does not go hand in hand everywhere: there are countries in which it is more developed – few, UK and USA mainly – and others, most of them, where the political, economic and cultural context have slowed down the expansion. Another sign of substantial immaturity is the low level of sophistication of the financial instruments that characterize the market today, where the operators invest using traditional instruments differentiated only by a different nature of the recipients.

These gaps inevitably affect data and literature: few, fragmented, perhaps contradictory and discontinuous; this obviously further hinders the spread and growth of the industry, given that, if the supply is present, demand will be low, as investors, especially private ones, often require historical series or track records to consult before engaging their capital.

This is also linked to the problem of transparency because it is necessary on the one hand to make known the organisations that implement this type of investment and, on the other hand, to intrigue and attract potential investors. Obviously, the greater the clarity and the sharing of information, the more the attractiveness increases, and the impact investment market grows attracting both investors interested mainly in social return – the so-called impact-first investors – and those attracted by the economic return, the financial-first investors. The importance of clear and continuous reporting is underlined by Clark et al. (2013) in the paragraph of their research entitled “Island of high performance in a sea of uncertainty”. In turn, the lack of information, in addition to discouraging investors, means that the range of possible social investments is rather small, which implies higher costs and lower returns (Allman and De Nogales, 2015).

Fundamental transparency also to face problems and significant risks such as illiquidity risk or impact washing risk. Certainly, the use of metrics or criteria helps to fill this gap even if the standards present at this time are not always adequate and suffer from intrinsic problems in the model with which they are applied.

In addition to bigger clarity, bigger presence, regulation and co-investments by the institutions would certainly help the development of these investments.

Finally, about the immediate future prospects of this industry, it is pointed to what Ronald Cohen, president of Global Social Impact Investment Steering Group, called “tipping point” in the last summit on the impact investments held in New Delhi 8-9 October 2018: USD 300 billion by 2020 and more than one billion of beneficiaries. A challenge that is not impossible if we consider that today this industry moves around USD 230 billion, with an annual growth of 30% between 2012 and 2018.

Chapter 3

Discovering the database

This chapter describes in the first part how the data were collected to enrich the database, their origin, the adopted criteria and the sites or databases used; in the second part the structure that we decided to give to the database as the result of the present work will be discussed, the logic used in the choice of the variables and the functioning that will derive from it.

3.1 – Data's source

The data used to create the database were initially selected on ImpactBase, the online database owned by GIIN – Global Impact Investing Network. The latter is a non-profit organisation, in fact it is registered as a 501(c)3 organisation, which deals with spreading and making new investments with a social impact purpose, their value and their effectiveness in the world; in fact, it appears as follows:

"The Global Impact Investing Network is a not-for-profit organization dedicated to increasing the scale and effectiveness of impact investing around the world. […]"

ImpactBase is a database entirely dedicated to the impact investments industry, created to make order in a fragmented and inefficient marketplace; it was created to allow the actors of this industry to know each other, in fact it is possible to access them as a fund manager or as an impact investor. This allows to the first to be able to present their funds and the information related to them, in the clearest way possible, given the novelty of this type of investments and the lack of information and notions available in this area. The investors, both experienced and new, can search on this platform for the funds and related investments that better fit with their

impact investment interests and objectives, given the possibility to browse, search and filter across asset classes, impact themes, geographical targets, fundraising status, assets under management and other parameters.
On practical level, ImpactBase was created in July 2009, it is constantly evolving and expanding, and now, it collects the information of 445 active funds, with 4,037 active subscribers.
The images 3.1, 3.2 and 3.3, slightly rearranged with respect to those present on the website, summarize the impact investments carried out by the funds registered on ImpactBase, with particular attention, respectively, to the geographical, social targets and asset classes.
As it is possible to note, most of the investments are made in the United States, in Africa and in the South of the Asian continent; the most relevant investments are made to allow the access to finance and basic services. Most of the investments (53%) are made in private equity and venture capital.

Figure 3.1 – Global vision about the geographical allocation of investments.

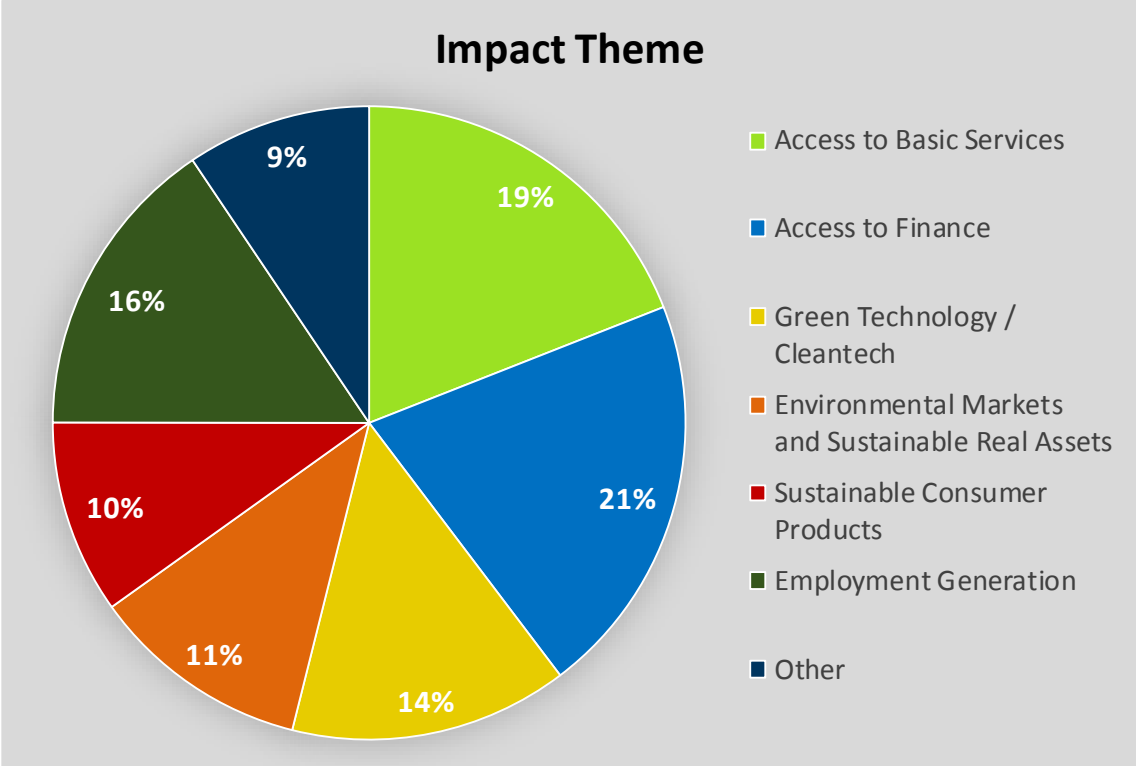


Figure 3.2 – Pie chart summarizing the subdivision of the treated social issues.

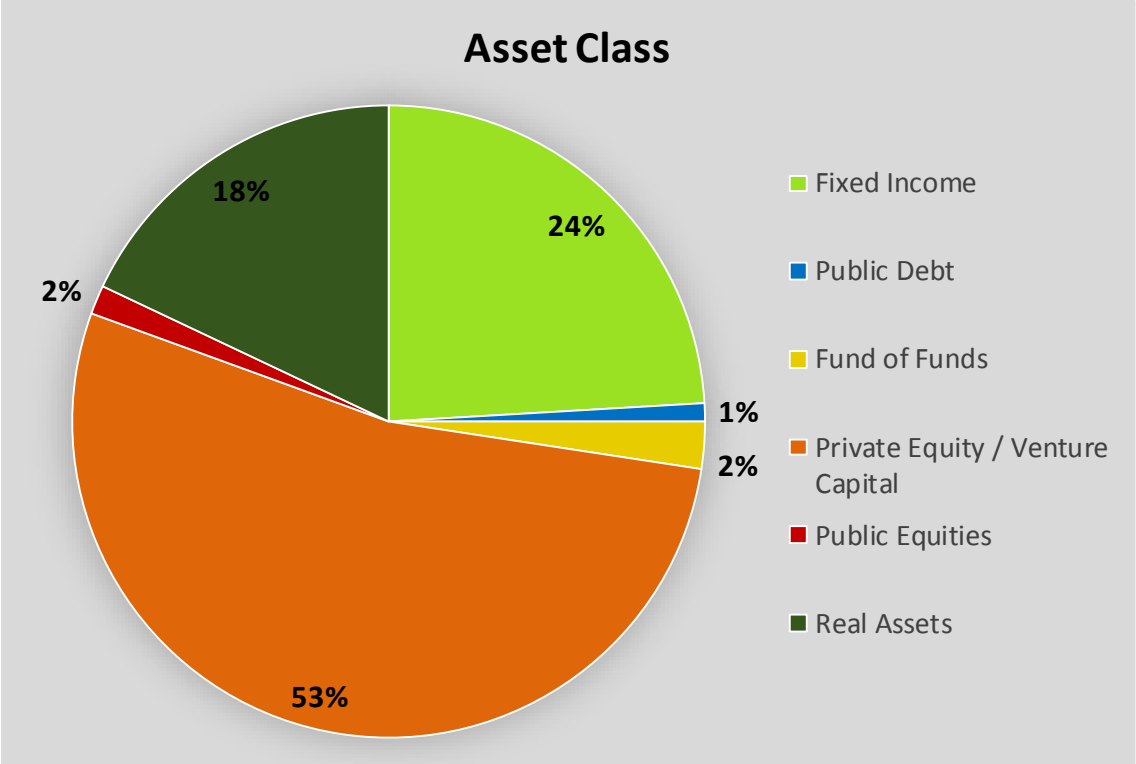


Figure 3.3 – Pie chart summarizing the different types of asset classes in which impact-oriented funds invest.

After having selected all the appropriate profiles of the funds present on ImpactBase, it was decided to enrich the sample, especially in terms of information, since many funds did not present some of the data considered relevant: this database provides a lot of descriptive information – such as social impact theme, the geographical target area, the corporate governance of the funds and so on – but almost no numerical variable useful for a possible economic-financial analysis.
Of the 445 active only a part has been selected, excluding almost all the funds that did not fall into the "private equity" and "venture capital" asset classes, since they are outside the interest of the study of the present elaborate.
After downloading the fund profiles, a set of variables was created, starting from the qualitative information fund, to facilitate the subsequent statistical analysis.

Subsequently, it was decided to use another database in order to find further information, especially quantitative, on the funds already found. The idea was to leave the sample unchanged, since it was certain that the nearly 300 funds that were presented had social impact purpose, as they were existing on ImpactBase.
Crunchbase was chosen, a platform for finding business information about private and public companies. It is a much larger database than the one used previously: first because it does not only deal with impact investments, therefore it contains the profiles of all types of funds, not only those impact-oriented, as it was the case with ImpactBase. Furthermore, it also contains the profiles of the companies that manage the funds, the so-called management companies or general partners. After researching on Crunchbase the funds obtained from the ImpactBase list and the related management companies, it was realized that in most of cases, of the two profiles – fund and general partner – only the second one was found, therefore the profiles of most of the funds were missing.

It was therefore necessary to remedy this lack and it was decided to use a third and last database: Thomson ONE Banker, owned by the Thomson Reuters group, a financial information giant.
This database is one of the largest and most complete in the world at the moment, comparable to those made by Bloomberg LP and FactSet Research Systems Inc.

It is described in the following way on the official website:

"Thomson ONE Banker combines a full range of financial data and source documents with powerful functionality – all online. Whether you're a financial analyst, researcher, investment banker or portfolio manager – Thomson ONE Banker delivers the data you need, the way you want, from wherever you are."

The main advantage of this database, in addition to the amount of information, it is the possibility to download the profiles on the site, in PDF or Microsoft Excel format. We then proceeded by first downloading all the profiles of the funds found through ImpactBase, of which we had the certainty that they were impact-oriented funds, then we downloaded the profiles of the funds connected to these, as managed by the same management company; finally, we took the companies in which these funds made investments, the so-called delivery organisations.

3.2 – The sample and the structure of the database

At the moment, the sample is made up of the profiles of **284** funds and **974** delivery organisations, all downloaded in Microsoft Excel files by Thomson ONE Banker.
Both the funds and the companies in which they invest have been classified by a unique alphanumeric identification code: the funds have an ID of the type "F000000", where the letter "F" refers to the term "fund"; IDs grow progressively starting from F000001. In the same way, it was reasoned for the delivery organisations, replacing the letter "F" with the letter "C" which stands for "company".
The idea, as well as the topic of next chapters, it is to study not only the characteristics of the funds – based on geographical parameters, ownership, social themes, asset class etc. – but also the relationship between impact-oriented funds and the companies in which they invest in order to observe possible relations between the two parties and to discriminate, for example, funds and companies based on size, degree of activity in the investments and so on.

For the present analysis, the database has been appropriately structured: it consists of 21 matrices, all summarized in the following 3.4 image and subsequently described in an accurate manner.
It is anticipated immediately that not all the variables of each table will be discussed, the most intuitive, easy to understand and sometimes marginal will be left to the reader's understanding.

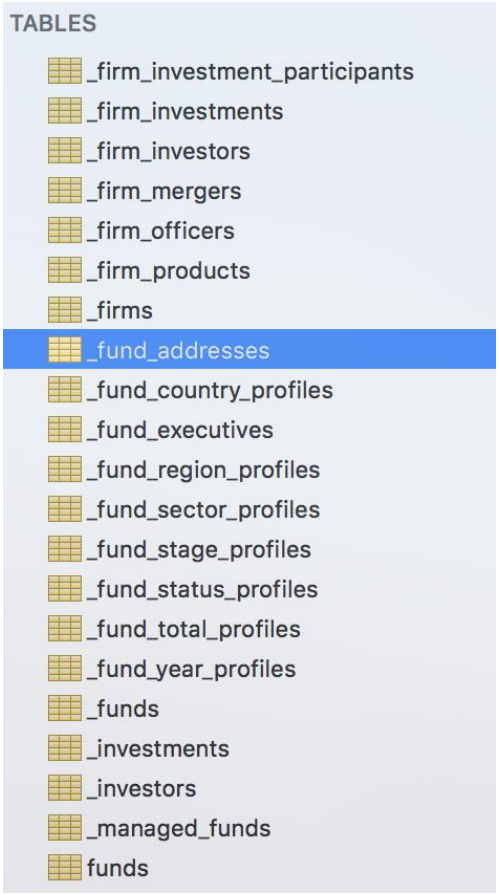


Figure 3.4 – Overview of all twenty-one tables that make up the database on impact-oriented funds.

_firm_investment_participants: in this table [figure 3.5] there is the detail of the investments made by the funds in the companies; for each company it is known how many and which funds invested in every round. The variable investment_counter indicates the round of investment while the variable participant_counter gives the final count of funds that invested in the company in every round.
To give a practical example, the company C001072 during the second round earned capitals from nine funds: so it is known the fund which is participating in every round of investment. The variable investor_company

and investor_fund show respectively the management company and the fund – or the funds, if more than one – managed by it.

firm	investment_counter	participant_counter	investor_company	investor_fund
C001072	1	1	Boston Ventures	BV Investment Partners Fund IX
C001072	2	1	Crosslink Capital Inc	Crosslink Capital, Inc. - Unspecified Fund
C001072	2	2	Fresco Capital	Fresco Capital - Unspecified Fund
C001072	2	3	Govtech Fund	Govtech Fund
C001072	2	4	Kapor Capital	Kapor Capital - Unspecified Fund
C001072	2	5	Reach Capital	Reach, L.P.
C001072	2	6	Runa Capital	*Runa Capital - Unspecified Fund
C001072	2	7	CSC Upshot	NULL
C001072	2	8	Jared Kopf, Josh Reeves, Tomer London	NULL
C001072	2	9	Maiden Lane Ventures	NULL
C001072	3	1	Runa Capital	Runa Capital - Unspecified Fund
C001072	4	1	Crosslink Capital Inc	*Crosslink Capital, Inc. - Unspecified Fund
C001072	4	2	Imagine K12 LLC	Imagine K12 - Unspecified fund
C001072	4	3	Kapor Capital	Kapor Capital - Unspecified Fund
C001072	4	4	NewSchools Venture Fund	*NewSchools Venture Fund - Unspecified...
C001072	4	5	Romulus Capital LLC	Romulus Capital II, L.P.
C001072	4	6	Runa Capital	*Runa Capital Fund II
C001072	4	7	Jared Kopf	NULL
C001072	4	8	EdMentor VC	NULL
C001072	4	9	Fresco Capital	NULL

Figure 3.5 – Table _firm_investment_participants.

_firm_investments: this matrix [figure 3.6] provides the detail, for each company, of the number of investment rounds received (counter) and there is also the date (investment_date) for each; "entities" instead indicates the number of subjects that participated in that round, bringing capital to the delivery organisation.

firm	counter	investment_date	stage	entities	value	total_equity	pe_debt	valuation	location
C001072	1	10/30/2017	Acquisition	1	-	-	-	Not Disclosed	San Francisco,United States
C001072	2	02/10/2016	Early Stage	9	-	5.60	-	Not Disclosed	San Francisco,United States
C001072	3	11/23/2015	Early Stage	1	-	6.19	-	Not Disclosed	San Francisco,United States
C001072	4	09/19/2014	Early Stage	9	-	2.20	-	Not Disclosed	San Francisco,United States
C001066	1	01/17/2018	Expansion	3	-	10.61	-	Not Disclosed	Chicago,United States
C001066	2	07/11/2016	Bridge Loan	1	-	-	4.00	Not Disclosed	CHICAGO,United States
C001066	3	06/10/2015	Early Stage	1	-	9.70	-	Not Disclosed	Chicago,United States
C001066	4	02/12/2015	Bridge Loan	1	-	0.50	-	Not Disclosed	Chicago,United States
C001066	5	05/05/2014	Early Stage	1	-	1.75	-	Not Disclosed	Chicago,United States
C001066	6	09/07/2012	Seed	4	-	1.03	-	Not Disclosed	Chicago,United States
C001099	1	06/30/2009	Bridge Loan	1	-	-	-	Not Disclosed	Ho Chi Minh,Vietnam
C000634	1	09/10/2013	Expansion	3	-	12.66	-	Not Disclosed	London,United Kingdom
C000634	2	09/26/2011	Expansion	3	-	7.78	-	Not Disclosed	London,United Kingdom
C000634	3	08/13/2010	Expansion	4	-	4.68	-	Not Disclosed	London,United Kingdom
C000634	4	10/08/2009	Seed	3	-	1.61	-	Not Disclosed	London,United Kingdom
C001258	1	09/08/2015	Early Stage	2	-	-	-	Not Disclosed	Bandung,Indonesia
C000620	1	04/05/2006	Later Stage	3	-	2.75	-	Not Disclosed	Yonkers,United States
C001516	1	09/30/2016	Early Stage	3	-	0.08	-	Not Disclosed	Ooty,India
C001516	2	04/16/2013	Early Stage	1	-	-	-	Not Disclosed	Ooty,India
C000608	1	06/30/2017	Early Stage	5	-	7.50	-	Not Disclosed	San Francisco,United States
C000608	2	02/08/2016	Seed	2	-	4.50	-	Not Disclosed	San Francisco,United States
C001270	1	01/18/2017	Acquisition	2	-	10.00	-	Not Disclosed	Bhubaneswar,India

Figure 3.6 – Table _firm_investments.

For example, the company C001072 financed itself through 4 rounds of investment: in that of 10/30/2017 only one subject participated, in the one of 02/10/2016 nine and so on. It should be noted that the database presents

an inverse chronological order: first the most recent investments and then the older ones. It should be specified that the lenders do not have details here: they are not necessarily 20 different subjects (9+1+9+1).

_firm_investors: the below table [figure 3.7] shows, for each company, the funds that have invested (fund) in addition to the details of the company that in turn manages the fund (company). The "round" variable indicates in which investment round the company has received funding from each fund. To give a practical example, the company C001072 has received capitals from 14 different funds, in turn managed by several general partners, not necessarily 14 different because the same general partner can manage more funds, as happens with the management company Runa Capital in the picture. One of the funds of the latter company, Runa Capital Fund, participated in round 2 and 3, as seen in the green detail in the figure. Furthermore, crossing the data with previous table, everything turns: the fund C001072 received funding from 20 subjects, in 4 rounds. In the image 3.7 the "counter" only reaches up to 14 but if we count all the "rounds" we get 20 because, as was foreseeable, a subject finance the same business several times, in more rounds of investment. In addition, as proof, the variable "round" reaches up to 4.

firm	counter	company	fund	stage	round
C001072	1	Crosslink Capital Inc	Crosslink Capital, Inc. - Unspecified Fund	Balanced Stage	1,3
C001072	2	Imagine K12 LLC	Imagine K12 - Unspecified fund	Seed Stage	1
C001072	3	Kapor Capital	Kapor Capital - Unspecified Fund	Early Stage	1,3
C001072	4	NewSchools Venture Fund	NewSchools Venture Fund - Unspecified Fund	Early Stage	1
C001072	5	Romulus Capital LLC	Romulus Capital II, L.P.	Seed Stage	1
C001072	6	Runa Capital	Runa Capital Fund II	Balanced Stage	1
C001072	7	Undisclosed Firm	Undisclosed Fund	Balanced Stage	1,3
C001072	8	Undisclosed Firm	Undisclosed Fund	Balanced Stage	3
C001072	9	Undisclosed Firm	Undisclosed Fund	Balanced Stage	1,1,3
C001072	10	Boston Ventures	BV Investment Partners Fund IX	Buyouts	4
C001072	11	Runa Capital	Runa Capital - Unspecified Fund	Balanced Stage	2,3
C001072	12	Govtech Fund	Govtech Fund	Seed Stage	3
C001072	13	Fresco Capital	Fresco Capital - Unspecified Fund	Early Stage	3
C001072	14	Reach Capital	Reach, L.P.	Early Stage	3
C001066	1	OCA Ventures	OCA Ventures - Unspecified Fund	Early Stage	3,4
C001066	2	Sandbox Industries LLC	Sandbox Industries, Inc. - Unspecified Fund	Balanced Stage	6
C001066	3	Undisclosed Firm	Undisclosed Fund	Balanced Stage	1,6
C001066	4	Undisclosed Firm	Undisclosed Fund	Generalist	5
C001066	5	Eclipse Ventures	Eclipse Fund II, L.P.	Early Stage	6
C001258	1	Ideosource Asia PT	Ideosource - Unspecified Fund	Balanced Stage	1
C001258	2	Aqua Spark BV	Aqua Spark	Seed Stage	1
C001516	1	Unitus Impact Partners LLC	Livelihood Impact Fund L.P.	Early Stage	2

Figure 3.7 – Table _firm_investors.

_firm_mergers: in this table [figure 3.8] there is the detail of possible acquisitions of the various delivery organisations. The "target" variable indicates the name – possibly new, if changed after the operation – for each ID. For example, the C000620 company, HDS Cosmetic Lab Inc, has been

involved in 3 acquisitions; for each transaction there is a variable that indicates the date (announced_date), the buyer and the "status" of the transaction.

firm	counter	announced_date	target	acquirer	status	value	ebitda	target_advisor	acquiror_advisor
C001072	1	10/30/2017	Schoolmint Inc	BV Investment Partners LLC	Completed	-	-	-	-
C001099	1	06/30/2016	Golden Lotus Securities Corp	Hoa Binh Constr & RE Corp	Completed	-	-	-	-
C001099	2	01/09/2015	Golden Lotus Securities Corp	Hoa Binh Constr & RE Corp	Completed	-	-	-	-
C001099	3	11/21/2014	Golden Lotus Securities Corp	Hoa Binh Constr & RE Corp	Completed	-	-	-	-
C001099	4	03/27/2013	Hoa Binh Constr & RE Corp	Lucerne Enterprise Ltd	Completed	9.93	6.6	-	-
C001099	5	02/09/2012	Hoa Binh Constr & RE Corp	Hoa Binh Constr & RE Corp	Intended	-	-	-	-
C001099	6	08/18/2011	Peace Tour Co	Hoa Binh Constr & RE Corp	Completed	1.54	-	-	-
C001099	7	06/08/2011	Hoa Binh Constr & RE Corp	Hoa Binh Constr & RE Corp	Completed	-	-	-	-
C001099	8	03/05/2010	Hoa Binh Constr & RE Corp	Hoa Binh Constr & RE Corp	Completed	1.04	8.2	-	-
C001099	9	07/30/2009	Hoa Binh Constr & RE Corp	SEAF Blue Waters Growth Fund	Pending	1.70	-	-	-
C001099	10	07/31/2007	Hoa Binh Constr & RE Corp	Chip Eng Seng Corp Ltd | Cirque P...	Pending	4.85	-	-	-
C000620	1	04/22/2014	HDS Cosmetic Lab Inc	SA Designer Parfums Ltd	Completed	-	-	-	-
C000620	2	01/22/2007	HDS Cosmetic Lab Inc	Procter & Gamble Co	Completed	-	-	-	Blackstone Group LP
C000620	3	04/08/2004	HDS Cosmetic Lab Inc	North Castle Partners LLC	Completed	-	-	-	-
C001516	1	09/19/2016	Lawrencedale Agroprocessing	Bestseller Foundation | Unitus Imp...	Completed	-	-	-	-
C001516	2	04/16/2013	Lawrencedale Agroprocessing	Aspada Investment Advisors Pvt	Completed	-	-	-	-
C001270	1	01/17/2017	Milk Mantra Dairy Pvt Ltd	Neev Fund | Eight Roads Ventures...	Completed	9.77	-	KPMG	-
C001270	2	11/24/2014	Westernland Dairy Pvt Ltd	Milk Mantra Dairy Pvt Ltd	Completed	1.62	-	-	-
C001502	1	06/11/2018	Aye Finance Pvt Ltd	Capitalg | SAIF Partners | LGT Group	Completed	21.77	-	-	-
C001462	1	04/03/2018	Thirumeni Finance Pvt Ltd	ChrysCapital Advisors LLP | Elevar...	Completed	53.75	-	Kotak Mahindra Capital Co	-
C001462	2	10/12/2017	Thirumeni Finance Pvt Ltd	Michael & Susan Dell	Completed	3.00	-	-	-
C001462	3	03/23/2016	Thirumeni Finance Pvt Ltd	Zephyr Peacock India Fund | Kaize...	Completed	14.00	-	-	-
C001462	4	09/09/2014	Thirumeni Finance Pvt Ltd	LGT Venture Philanthropy | ON Ma...	Completed	4.46	-	-	-
C000768	1	12/20/2004	Rowe Farm Meats Ltd	Central Canada Foods Corp	Pending	-	-	-	-
C001476	1	04/01/2014	Glendale Recycling Ltd-Compost	The TEG Group PLC	Completed	0.67	-	-	N+1 Singer Capital Markets
C001476	2	06/02/2010	Simpro Ltd	The TEG Group PLC	Completed	8.79	-	BDO	-
C001476	3	06/02/2010	The TEG Group PLC	Bridges Ventures Ltd	Completed	8.15	78.4	-	-
C001476	4	06/22/2009	Banham Compost Ltd	The TEG Group PLC	Pending	5.12	-	-	-
C000783	1	09/02/2004	Biorem Technologies Inc	Ontario Cap Opportunities Inc	Completed	-	-	-	-
C001489	1	07/10/2017	Advanced Microgrid Solutions	Undisclosed Acquiror | GE Venture...	Completed	34.71	-	-	-

Figure 3.8 – Table _firm_mergers.

_firm_officers: this table [figure 3.9] presents the members of the board of directors of the various delivery organisations; in addition to the name, the position held by each (title) is also indicated. The matrix is the same as _fund_executives for funds.

firm	counter	officer	title
C001072	1	Forum Desai	Co-Founder
C001072	2	Galen Li	Vice President
C001072	3	Jinal Jhaveri	CEO, Co-Founder
C001072	4	Yusuf Bhabhrawala	Executive Officer
C001066	1	Jori Hardman	Executive Officer
C001066	2	Katy De Leon	Vice President
C001066	3	Mert H Iseri	CEO, Co-Founder
C001066	4	Stephen Woolverton	Vice President, Operations
C001066	5	Yuri Malina	Vice President
C001099	1	Duy Q Le	Executive Director
C001099	2	Nhat Q Truong	Executive Director
C000634	1	Martin Riediker	Chairman & Director
C000608	1	Adam Pisoni	CEO & Founder
C000608	2	Heather Luntz	Executive Officer
C000608	3	Jen Bettendorff	Executive Officer
C000608	4	Parul Vora	Executive Officer
C000608	5	Ryan Triggs	Executive Officer
C001270	1	Kedar N Choudhury	Chief Financial Officer
C001502	1	Anamoy Ranjan	Vice President
C001502	2	B.N. Bala Murali	Vice President
C001338	1	Alvar Veersalu	Chairman & Director
C001338	2	Inna Nomsalu	Executive Officer

Figure 3.9 – Table _firm_officers.

_firm_products: here is the detail of goods and/or services provided by the various delivery organisations. The “counter” variable proves to be useful again for companies that provide more than one. An idea of this matrix can be obtained from figure 3.10.

firm	counter	product
C001066	1	Hand Hygiene 2.0
C000620	1	DDF REDNESS RELIEF
C000620	2	Doctor's Dermatological Formula (DDF)
C000620	3	DDF Brightening Cleanser
C000620	4	DDF Nourishing Buffing Beads
C001516	1	Leaf
C001516	2	Corapack
C001270	1	MilkyMoo
C000740	1	ScentsaBeauty
C000740	2	Scentsa
C000783	1	Biosorbens

Figure 3.10 – Table _firm_products.

_firms: the present table – figure 3.11 – is the same as _funds for the funds; that is, it creates an overview of the qualitative variables for each company. Excluding the easiest variables to guess – such as ID, name, address etc. – the less well-known ones, such as the SIC and NAICS codes, respectively acronym of Standard Industrial Classification and North America Industry Classification System, deserve to be investigated; the second is the evolution of the first: they allow companies to be classified according to the sector they belong to, using a numerical code. Since it is not yet known how useful these variables can be, the numerical code, written in brackets, as well as the full description of the sector to which it belongs has been retained in the corresponding column. “total_funding” indicates the amount of funding raised so far – July 2018 – for each company.

identifier	name	address	contacts	industry	sic	naics
C001072	SchoolMint Inc	171 2nd Street, San Francisco, Cal...	Phone: 18442872466 | www.scho...	Education Services (2843)	Prepackaged Software (7372)	Software Publishers
C001066	SwipeSense, Inc.	4424 N Ravenswood Avenue, Chic...	Phone: 8009744940 | www.swipe...	Other Measuring Devices (3720)	Measuring and Controlling Device...	Surgical and Medic
C001099	Hoa Binh Construction Group JSC	235 Vo Thi Sau, Ward 7, Ho Chi Mi...	Phone: 84839325030 | Fax: 8483...	Agriculture related (9510)	Farm and Garden Machinery and E...	Farm and Garden M
C000634	Plaxica Ltd	Imperial College Incubator, Londo...	Phone: 442075943575 | Fax: 442...	Polymer (Plastics) Materials (8152)	Plastics Materials, Synthetic Resins...	Plastics Material an
C001258	Multidaya Teknologi Nusantara PT	Cikutra Baru V, No. 5, Bandung, N...	Phone: 62227209215 | www.efish...	ERP/Inventory Software (2739)	Manufacturing Industries, Not Else...	Other Commercial a
C000620	HDS Cosmetics Lab, Inc.	28 Wells Avenue, Yonkers, New Yo...	Phone: 9148352200 | Fax: 91483...	Health & Beauty Aids (7420)	Perfumes, Cosmetics, and Other T...	Soap and Other Det
C001516	Lawrencedale Agro Processing (In...	9A, Higgins Road, Ooty, Non-US 6...	Phone: 914232448133 | Fax: 914...	Agriculture related (9510)	NULL	Other Noncitrus Fru
C000608	Always Be Learning Inc	875 Indiana Street, San Francisco,...	www.ablschools.com	Educational Software (2733)	Prepackaged Software (7372)	Software Publishers
C001270	Milk Mantra Dairy Pvt Ltd	Nandan Kanan Rd, Bhubaneswar,...	Phone: 916742596546 | www.mil...	Health Food (7320)	NULL	Dairy Cattle and Mi
C001264	Finclusion Holding SA de CV	Mexico, Non-US Mexico	VE Industry Code	Non Bank Credit (9235)	Short- Term business Credit Instit...	Consumer Lending
C001502	Aye Finance Pvt Ltd	8th Floor, Vipul Square,, Gurgaon,...	Phone: 911143089590 | www.aye...	Non Bank Credit (9235)	Miscellaneous Business Credit Inst...	Secondary Market Fi
C000813	Cambodia Plantations Pty., Ltd.	7500A Beach Road, Singapore, No...	VE Industry Code	Financial Services,Other (9299)	Offices of Holding Companies, No...	Corporate, Subsidia
C000807	Chefs Plate Inc	30-34 Duncan Street, Toronto, On...	Phone: 18554202327 | www.chefs...	Consumer Products (2812)	Courier Services, Except By Air (4215)	Electronic Shopping
C000740	Crescent House Publishing Inc	2218 Faraday Avenue, Carlsbad, C...	Phone: 7604318800	Retail Publishing (books,magazine...	Books: Publishing, Or Publishing a...	Book Publishers (51
C000998	Victor Pipe Industries	1st Str. 2nd Line, 2nd Plot, Kabul,...	Phone: 93793701003 | www.victo...	Pumps,Ball Bearings,Compressors,...	Steel Works, Blast Furnaces (Includ...	Iron and Steel Mills
C001338	Valnes AS	Parnu mnt 139 E/4, Tallinn, Non-...	Phone: 372-6-565-485 | Fax: 37...	Hardware,Plumbing Supplies (9440)	NULL	Hardware Manufact
C000754	1001Pact SAS	24 rue de l'Est, Paris, Ile de France...	Phone: 3301 85 08 1834 | 1001p...	Finance/Real Estate/Insurance Inf...	Information Retrieval Services (7375)	Internet Publishing
C001462	Thirumeni Finance Pvt Ltd	No. 58C-110 Service Road, Bengal...	Phone: 918951093452 | varthana...	Non Bank Credit (9235)	Personal Credit Institutions (6141)	Consumer Lending
C001304	Vestaron Corp	4717 Campus Drive, Kalamazoo,...	Phone: 2693723108 | Fax: 26935...	Genetic. Eng, Microorganisms to r...	Pesticides and Agricultural Chemic...	Pesticide and Other
C001310	Outsourcing SAC	Lima, Non-US Peru	VE Industry Code	Consulting Services (9350)	Arrangement of Transportation of...	Process, Physical D
C000768	Rowe Farm Meats Ltd	105 Roncesvalles Avenue, Toronto...	Phone: 4165323738 | www.rowef...	General Food Products (7350)	Meats and Meat Products (5147)	Meat Processed fro
C001476	Teg Group PLC	Westmarch House, 42 Eaton Avn,...	Phone: 441772644980 | Fax: 441...	Chemical and Solid Material Recycl...	Refuse Systems (4953)	Solid Waste Combu

naics	description	foundation_date	operating_status	operating_stage	backed_status	total_funding
) Software Publishers (511210)	SchoolMint, Inc. is a United States...	01/01/2013	Active	Shipping Product or Providing Services	Currently PE/VC Backed	13.99 USD Mil
evice... Surgical and Medical Instrument M...	SwipeSense, Inc. is a United States...	01/01/2012	Active	Shipping Product or Providing Services	Currently PE/VC Backed	23.59 USD Mil
and E... Farm and Garden Machinery and E...	Hoa Binh Construction Group Joint...	12/01/2000	Active	Shipping Product or Providing Services	Formerly PE/VC Backed	– USD Mil
Resins... Plastics Material and Resin Manufa...	Plaxica Ltd is a United Kingdom-b...	01/01/2008	Active	Shipping Product or Providing Services	Formerly PE/VC Backed	26.73 USD Mil
ıt Else... Other Commercial and Service Ind...	PT Multidaya Teknologi Nusantara...	NULL	Active	Shipping Product or Providing Services	Currently PE/VC Backed	– USD Mil
ther T... Soap and Other Detergent Manufa...	Develops, manufactures and mark...	01/01/1991	Acquisition	Shipping Product or Providing Services	Formerly PE/VC Backed	4.35 USD Mil
Other Noncitrus Fruit Farming (11...	Lawrencedale Agro Processing Ind...	NULL	Active	Shipping Product or Providing Services	Currently PE/VC Backed	0.08 USD Mil
) Software Publishers (511210)	Always Be Learning, Inc. is a Unite...	01/01/2015	Active	Development	Currently PE/VC Backed	12.00 USD Mil
Dairy Cattle and Milk Production (...	Milk Mantra Dairy Pvt Ltd is an Ind...	08/01/2009	Active	Shipping Product or Providing Services	Currently PE/VC Backed	27.42 USD Mil
Instit... Consumer Lending (522291)	Finclusion Holdings SA de CV is a...	NULL	LBO	Shipping Product or Providing Services	Current Portfolio Status Unknown	7.00 USD Mil
it Inst... Secondary Market Financing (522294)	Aye Finance Pvt. Ltd. is an India-b...	01/01/1993	Active	Shipping Product or Providing Services	Currently PE/VC Backed	35.80 USD Mil
s, No... Corporate, Subsidiary, and Region...	Cambodia Plantations operates as...	04/30/2009	Active	Shipping Product or Providing Services	Formerly PE/VC Backed	1.80 USD Mil
r (4215) Electronic Shopping (454111)	Chefs Plate Inc is a Canada-based...	11/01/2014	Active	Shipping Product or Providing Services	Currently PE/VC Backed	13.87 USD Mil
ning a... Book Publishers (511130)	Crescent House Publishing, Inc, is...	NULL	Active	Shipping Product or Providing Services	Formerly PE/VC Backed	– USD Mil
Includ... Iron and Steel Mills (331111)	The Company manufactures and d...	01/01/2003	Active	Shipping Product or Providing Services	Formerly PE/VC Backed	– USD Mil
Hardware Manufacturing (332510)	Provides import, wholesale and ret...	01/01/1993	Active	NULL	Formerly PE/VC Backed	– USD Mil
s (7375) Internet Publishing and Broadcasti...	1001Pact SAS is a France-based c...	NULL	Active	Shipping Product or Providing Services	Currently PE/VC Backed	0.79 USD Mil
6141) Consumer Lending (522291)	Thirumeni Finance Private Limited,...	01/01/2013	Active	Shipping Product or Providing Services	Currently PE/VC Backed	72.17 USD Mil
hemic... Pesticide and Other Agricultural C...	Vestaron Corp is a United States-...	NULL	Active	Shipping Product or Providing Services	Currently PE/VC Backed	52.45 USD Mil
on of... Process, Physical Distribution, and...	The Company provides logistics s...	01/01/2000	Active	Shipping Product or Providing Services	Formerly PE/VC Backed	– USD Mil
.47) Meat Processed from Carcasses (3...	Rowe Farm Meat, Ltd. is a Canada...	01/01/1967	Active	Shipping Product or Providing Services	Formerly PE/VC Backed	3.60 USD Mil
Solid Waste Combustors and Incin...	The TEG Group Plc is a United-Kin...	10/03/1995	Went Public	Shipping Product or Providing Services	Formerly PE/VC Backed	41.47 USD Mil
Solid... Administration of Air and Water R...	Biorem Technologies, Inc. is a Can...	01/01/1991	Went Public	Shipping Product or Providing Services	Formerly PE/VC Backed	7.86 USD Mil
Other Electric Power Generation (2...	Advanced MicroGrid Solutions, Inc...	01/01/2012	Active	Shipping Product or Providing Services	Currently PE/VC Backed	53.53 USD Mil

Figure 3.11 – Table _firms.

_fund_addresses: it contains the addresses of the headquarters of the various funds and any telephone contact, information associated with the ID that uniquely identifies each fund.
The algorithm used to extract the contents of the cells present in the Microsoft Excel files read the data and, every time it went to the head, it reported in a row of the database how much scanned. This explains why, for example, the first fund of the list, classified as F000217, presents its address and telephone number on 5 lines. As can be seen from image 3.12, the reading is facilitated by the presence of a counter – "counter", in the second column – which indicates where the information of a fund ends and the information of the next one begins. This variable is present in most of the matrices that make up the database and is very useful for reading and interpreting data even only visually.

fund	counter	address
F000217	1	4660 La Jolla Village Drive
F000217	2	Suite 650
F000217	3	San Diego, California 92122
F000217	4	United States
F000217	5	Phone:8582597654
F000203	1	Herengracht 201
F000203	2	Amsterdam, Non-US 1016BE
F000203	3	Netherlands
F000203	4	Phone:31852737462
F000029	1	14 Fricker Road

Figure 3.12 – Table _fund_addresses.

_fund_country_profiles: this table identifies, for each fund, the countries in which it has invested and, for each country, the exact number of delivery organisations (variable "companies"); the details of the total invested (amounts), the average of investments (averages) and the percentage of each investment on the total investments made by the fund (percentages) are also provided. Obviously, if a fund has invested in one company, the "amounts" and "averages" columns will have the same value.
The presence of the "counter" variable helps the reading again: for example, in image 3.13 it is possible to see how the fund F000388 has made investments in two countries (GE and AM stand for Georgia and Armenia) and, in each, has invested in only one delivery organisation (6M$ and 2M$).

The numerical data present are expressed in thousands of dollars and, if the data had not been found, NULL appears.

fund	counter	country	companies	amounts	averages	percentages
F000217	1	US	19	7999.00	421.000000	100.000000
F000029	1	TN	1	NULL	NULL	NULL
F000175	1	GB	2	8415.00	4207.500000	100.000000
F000388	1	GE	1	6000.00	6000.000000	75.000000
F000388	2	AM	1	2000.00	2000.000000	25.000000
F000439	1	DK	1	2614.20	2614.200000	66.070210
F000439	2	MN	1	1342.50	1342.500000	33.929790
F000439	3	GB	1	NULL	NULL	NULL
F000439	4	IN	2	NULL	NULL	NULL
F000405	1	US	17	12280.70	722.394118	100.000000
F000404	1	US	26	90157.00	3467.576923	100.000000
F000389	1	PL	1	NULL	NULL	NULL
F000174	1	GB	8	34725.70	4340.712500	37.022936
F000174	2	NO	1	20044.50	20044.500000	21.370519
F000174	3	FR	2	16918.50	8459.250000	18.037723
F000174	4	US	1	10938.50	10938.500000	11.662123
F000174	5	SE	1	6666.70	6666.700000	7.107727
F000174	6	DE	1	2059.90	2059.900000	2.196170
F000174	7	NL	1	1366.30	1366.300000	1.456686
F000174	8	CH	1	1075.00	1075.000000	1.146115
F000202	1	ZA	2	1500.00	750.000000	100.000000

Figure 3.13 – Table _fund_country_profiles.

_fund_executives: this matrix contains, for each fund, a list of the members of the board of directors, including the position held by each and, if present, their personal e-mail. This table is the analogue of _firm_officers for companies. The image 3.14 shows what has just been described.

fund	name	title	phone	email
F000217	Barry Wilson	Managing Partner	8582597654	barry@huntingtoncapital.com
F000217	Bhairvee Shavdia	Associate	8582597654	NULL
F000217	Claude Sapp	Executive Officer	8582597654	NULL
F000217	Frank Mora	Partner	8582597654	NULL
F000217	Hope Mago	Principal	8582597654	NULL
F000217	Jennifer Neivert	Executive Officer	8582597654	NULL
F000217	Joel Gragg	Principal	8582597654	NULL
F000217	Kurt Noyes	Chief Financial Officer	8582597654	NULL
F000217	Michael Chen	Associate	8582597654	NULL
F000217	Morgan Miller	Founding Managing Partner	8582597654	NULL
F000217	Nicolas Lopez	Principal	8582597654	NULL
F000217	Susan Stickle	Executive Officer	8582597654	NULL
F000217	Tim Bubnack	Managing Partner	8582597654	NULL
F000203	Tokunboh Ishmael	Executive Officer	31852737462	NULL
F000029	Bernard Lauwers	Vice President	2024733800	NULL
F000029	Bernardo Rico	Manager	2024733800	NULL
F000029	Bernie Sheahan	Vice President	2024733800	NULL
F000029	Dimitris Tsitsiragos	Vice President	2024733800	NULL

Figure 3.14 – Table _fund_executives.

_fund_region_profiles: this table is identical to the _fund_country_profiles matrix, the only difference is that it goes down more in detail; instead of presenting investments broken down by country, it indicates the "region" where they occurred, i.e. the state.
For example, image 3.13 shows that the fund F000217 invests in only one country, the United States, in 19 companies; from the image 3.15 below you can see the details of the above 19 companies: 12 in California, 1 in Washington and so on. The variables "amounts" and "averages" are expressed in thousands of dollars.

fund	counter	region	companies	amounts	averages	percentages
F000217	1	California	12.0	5499.0	458.25	68.7460932616577
F000217	2	Washington	1.0	2500.0	2500.0	31.25390673834229
F000217	3	Oregon	1.0	-	-	-
F000217	4	Nevada	1.0	-	-	-
F000217	5	Arizona	2.0	-	-	-
F000217	6	North Carolina	2.0	-	-	-
F000029	1	Non-US	1.0	-	-	-
F000175	1	Non-US	2.0	8415.0	4207.5	100.0
F000388	1	Non-US	2.0	8000.0	4000.0	100.0
F000439	1	Non-US	5.0	3956.7	791.3399999999999	100.0
F000405	1	Pennsylvania	4.0	4034.3	1008.575	32.85073326439046
F000405	2	Georgia	2.0	2119.6	1059.8	17.259602465657494
F000405	3	New York	2.0	1597.8	798.9	13.010659001522715
F000405	4	Ohio	1.0	1057.0	1057.0	8.607001229571603
F000405	5	Maryland	1.0	1028.0	1028.0	8.370858338694049
F000405	6	New Jersey	1.0	803.0	803.0	6.53871521981646
F000405	7	North Carolina	2.0	650.0	325.0	5.2928578989797
F000405	8	South Carolina	1.0	600.0	600.0	4.885714983673569
F000405	9	Massachusetts	2.0	325.0	162.5	2.64642894948985
F000405	10	Tennessee	1.0	66.0	66.0	0.5374286482040926
F000404	1	Washington	1.0	20000.0	20000.0	22.183524296504984

Figure 3.15 – Table _fund_region_profiles.

_fund_sector_profiles: here – figure 3.16 – is a detail of the industries in which the delivery organisations targets of fund investments are classified. The other variables are the same as previous matrices. Taking the example of fund F000217 again, we have the range of sectors in which the 19 companies in which it invests are located; also, in this matrix the "counter" variable that allows an immediate skimming of the funds is of considerable help.

fund	counter	sector	companies	amounts	averages	percentages
F000217	1	Industrial / Energy	5	4499.00	899.8000000000	56.2445305663
F000217	2	Manufacturing	2	2500.00	1250.0000000000	31.2539067383
F000217	3	Computer Software	2	1000.00	500.0000000000	12.5015626953
F000217	4	Transportation	1	NULL	NULL	NULL
F000217	5	Internet Specific	2	NULL	NULL	NULL
F000217	6	Utilities	1	NULL	NULL	NULL
F000217	7	Consumer Related	1	NULL	NULL	NULL
F000217	8	Medical / Health	2	NULL	NULL	NULL
F000217	9	Business Services	2	NULL	NULL	NULL
F000217	10	Semiconductor / Electricity	1	NULL	NULL	NULL
F000029	1	Financial Services	1	NULL	NULL	NULL
F000175	1	Manufacturing	1	8415.00	8415.0000000000	100.0000000000
F000175	2	Computer Software	1	NULL	NULL	NULL
F000388	1	Consumer Related	1	6000.00	6000.0000000000	75.0000000000
F000388	2	Business Services	1	2000.00	2000.0000000000	25.0000000000
F000439	1	Internet Specific	2	2614.20	1307.1000000000	66.0702100235
F000439	2	Other	1	1342.50	1342.5000000000	33.9297899765
F000439	3	Financial Services	2	NULL	NULL	NULL
F000405	1	Medical / Health	2	3361.30	1680.6500000000	27.3705896244
F000405	2	Consumer Related	4	2833.80	708.4500000000	23.0752318679
F000405	3	Internet Specific	4	2409.60	602.4000000000	19.6210313744
F000405	4	Industrial / Energy	2	1303.00	651.5000000000	10.6101443729

Figure 3.16 – Table _fund_sector_profiles.

_fund_stage_profiles: from this table we can see, for each fund, the maturity details of the companies in which it has invested; the variable that provides this information is "stage" and indicates at what stage the company is located – early stage, seed, acquisition, expansion and so on.
The other variables are the same as before, so we do not attach the image since it is identical to 3.16 replacing the "stage" variable to "sector".

_fund_status_profiles: similar to the previous table, information about the delivery organisation are provided; whereas before there was a more detailed information on the company's maturity, now we focus on the status: active, leveraged buyout (LBO), went public, defunct etc.
As can be easily guessed from image 3.17 the other variables are unchanged; there is also the detail of the 19 companies in which it has invested fund F000217. Variables in thousands of dollars.

fund	counter	status	companies	amounts	averages	percentages
F000217	1	Active	15.0	6999.0	466.6	87.49843730466309
F000217	2	Acquisition	2.0	1000.0	500.0	12.501562695336919
F000217	3	LBO	2.0	-	-	-
F000029	1	Went Public	1.0	-	-	-
F000175	1	Active	2.0	8415.0	4207.5	100.0
F000388	1	Active	2.0	8000.0	4000.0	100.0
F000439	1	Active	5.0	3956.7	791.3399999999999	100.0
F000405	1	Acquisition	6.0	5320.4	886.7333333333332	43.323263331894765
F000405	2	Active	10.0	4627.0	462.7	37.67700538242934
F000405	3	Defunct	1.0	2333.3	2333.3	18.999731285675896
F000404	1	Active	21.0	70791.8	3371.0380952380956	78.52058076466608
F000404	2	Acquisition	4.0	16650.2	4162.55	18.468005812083366
F000404	3	Pending Acquisition	1.0	2715.0	2715.0	3.011413423250552

Figure 3.17 – Table _fund_status_profiles.

_fund_total_profiles: this is a matrix that summarizes briefly, for each fund, the number of companies in which it invests (companies), the total invested (amounts), the average of the investments of each fund (averages) and the percentage of each investment on the total invested by each fund ("percentages", variable cut from photo 3.18). Variables in thousands of dollars.

fund	companies	amounts	averages
F000217	19	7999.00	421.000000
F000029	1	NULL	NULL
F000175	2	8415.00	4207.500000
F000388	2	8000.00	4000.000000
F000439	5	3956.70	791.340000
F000405	17	12280.70	722.394118
F000404	26	90157.00	3467.576923
F000389	1	NULL	NULL
F000174	16	93795.10	5862.193750

Figure 3.18 – Table _fund_total_profiles.

_fund_year_profiles: here, in addition to the usual variables, "year" has been introduced in the third column; this makes it possible to have, for each fund, the details of all the investments made over the years, in aggregate, that is without even discriminating the various target companies of the investments. For example, for the usual fund F000217 there is the detail of investments made from 2008 to 2012, see image 3.19; it is clear that it may have invested every year in the same company, since this matrix does not have such detail yet, it is necessary to join the data with other tables. Also in this case the variables are expressed in thousands of dollars.

fund	counter	year	companies	amounts	averages	percentages
F000217	1	2008	1	NULL	NULL	NULL
F000217	2	2009	8	1000.00	125.0000000000	12.5015626953
F000217	3	2010	6	3499.00	583.1666666667	43.7429678710
F000217	4	2011	4	NULL	NULL	NULL
F000217	5	2012	4	3500.00	875.0000000000	43.7554694337
F000029	1	2013	1	NULL	NULL	NULL
F000175	1	2014	2	8415.00	4207.5000000000	100.0000000000
F000388	1	2012	1	6000.00	6000.0000000000	75.0000000000
F000388	2	2013	1	2000.00	2000.0000000000	25.0000000000
F000439	1	2001	1	2614.20	2614.2000000000	66.0702100235
F000439	2	2003	1	NULL	NULL	NULL
F000439	3	2009	1	1342.50	1342.5000000000	33.9297899765
F000439	4	2016	1	NULL	NULL	NULL
F000439	5	2017	1	NULL	NULL	NULL

Figure 3.19 – Table _fund_year_profiles.

_funds: this matrix, very rich in variables, is the first to have been created and contains all the qualitative information on the funds, as well as some quantitative variables, such as the current size of the fund (size) and that which it should reach (target size). Image 3.20 shows a double-screen of this table and helps to better understand how many variables are present.

identifier	name	management_firm	vintage_year	stage
F000001	4B Capital Fund A, L3C	Creation Investments Capital Man...	2010	Early Stage
F000003	Aavishkaar Bharat Fund	Aavishkaar Venture Management S...	2017	Early Stage
F000004	Aavishkaar Goodwell India Microfi...	Aavishkaar Goodwell India Microfi...	2007	Early Stage
F000006	Aavishkaar Goodwell India Microfi...	Aavishkaar Goodwell India Microfi...	2007	Balanced Stage
F000007	Aavishkaar Goodwell India Microfi...	Aavishkaar Goodwell India Microfi...	2010	Balanced Stage
F000008	Aavishkaar India II	Aavishkaar Venture Management S...	2011	Balanced Stage
F000009	Aavishkaar India Micro Venture Ca...	Aavishkaar Venture Management S...	2001	Seed Stage
F000011	Accion Frontier Inclusion Fund, L.P.	Quona Capital Management Ltd	2014	Balanced Stage
F000018	Acumen Fund – Unspecified Fund	Acumen Fund Inc	2001	Balanced Stage
F000019	Adenia Capital	Adenia Partners Ltd	2003	Generalist
F000020	Adenia Capital II	Adenia Partners Ltd	2007	Generalist
F000021	Adenia Capital III	Adenia Partners Ltd	2012	Generalist
F000022	Adenia Capital IV LP	Adenia Partners Ltd	2016	Generalist

size	target_size	investor_size	status	raising_history
2.20 USD Mil	2.20 USD Mil	Independent Private Partnership	Had final close	Jan 2011 USD 2.20 Mil
95.37 USD Mil	NULL	Independent Private Partnership	Had close, still raising	Nov 2017 USD 95.37 Mil
18.30 USD Mil	25.00 USD Mil	Corporate PE/Venture Fund	Had final close	NULL
15.00 USD Mil	100.00 USD Mil	Corporate PE/Venture Fund	Had close, still raising	Apr 2010 USD 15.00 Mil
NULL	100.00 USD Mil	Corporate PE/Venture Fund	No close, still raising	NULL
94.00 USD Mil	120.00 USD Mil	Independent Private Partnership	Had final close	Dec 2011 USD 70.00 Mil
15.00 USD Mil	20.00 USD Mil	Independent Private Partnership	Had final close	Dec 2001 USD 0.44 Mil
141.00 USD Mil	NULL	Independent Private Partnership	Had final close	Oct 2015 USD 90.05 Mil
NULL	NULL	Independent Private Partnership	Had final close	NULL
12.55 USD Mil	NULL	Independent Private Partnership	Had final close	Dec 2003 USD 12.55 Mil
54.02 USD Mil	NULL	Independent Private Partnership	Had final close	Dec 2007 USD 54.02 Mil
126.72 USD Mil	NULL	Independent Private Partnership	Had close, still raising	Dec 2012 USD 126.72 Mil
108.86 USD Mil	217.70 USD Mil	Independent Private Partnership	Had close, still raising	Nov 2016 USD 108.86 Mil

Figure 3.20 – Table _funds.

_investments: here is the detail of the investments made by the individual funds; there is the name of the delivery organisation, the sector in which it operates, a geographical location, the date when the last investment took place and the status of the company. The variable “is_in_portfolio” indicates whether the company is still part of the fund portfolio at this time.
Before, in the matrix “_fund_status_profiles” (figure 3.17) we had the aggregate data, so we knew, for each fund, how many companies were in a certain status, but we did not know which ones.
The fund F000217 has invested in 19 companies, the image 3.21, confirming this, reports the detail; the “counter” variable is again very useful.

fund	counter	company	industry	is_in_portfolio	status	date	location
F000217	1	Anakam, Inc.	Computer Software and Services	No	Acquisition	08/19/2009	San Diego, United States
F000217	2	Wave Tech Solutions Grp	Computer Software and Services	No	Active	02/07/2011	Irvine, United States
F000217	3	Crescent House Publishing Inc	Consumer Related	No	Active	05/10/2011	Carlsbad, United States
F000217	4	CTM Enterprises Inc	Industrial/Energy	No	Active	08/31/2009	Las Vegas, United States
F000217	5	Diamond Contract Services Inc	Industrial/Energy	No	Active	06/13/2012	Burbank, United States
F000217	6	Dr Technologies Inc	Industrial/Energy	No	Active	02/12/2009	San Diego, United States
F000217	7	Paragon Airheater Technologies Inc	Industrial/Energy	No	Active	05/11/2010	Corona, United States
F000217	8	Protect Plus Air Holdings LLC	Industrial/Energy	No	Active	01/04/2012	Hickory, United States
F000217	9	Altrec.com Inc	Internet Specific	No	Active	11/29/2010	Redmond, United States
F000217	10	Vertical Management Systems Inc	Internet Specific	No	LBO	06/10/2011	Pasadena, United States
F000217	11	Eaton Veterinary Pharmaceutical Inc	Medical/Health	No	Acquisition	06/08/2012	Phoenix, United States
F000217	12	Vantage Mobility International LLC	Medical/Health	No	LBO	01/21/2011	Phoenix, United States
F000217	13	Advanced Structural Alloys LLC	Other Products	No	Active	01/24/2012	Oxnard, United States
F000217	14	Anabi Oil Corp	Other Products	No	Active	07/07/2010	Upland, United States
F000217	15	Environment Furniture Inc	Other Products	No	Active	12/31/2008	Los Angeles, United States
F000217	16	Lackey Group	Other Products	No	Active	06/30/2009	Hickory, United States
F000217	17	Reischling Press Inc	Other Products	No	Active	10/13/2010	Seattle, United States
F000217	18	Residential Design Services Inc	Other Products	No	Active	10/18/2010	Anaheim, United States
F000217	19	Rje International Inc	Semiconductors/Other Elect.	No	Active	01/31/2009	Irvine, United States
F000029	1	Amen Bank SA	Other Products	No	Went Public	01/24/2013	Tunis, Tunisia
F000175	1	MWR InfoSecurity Ltd	Computer Software and Services	No	Active	05/28/2014	Basingstoke, United Kingdom

Figure 3.21 – Table _investments.

_investors: in this table, figure 3.22, there is the detail, for each fund, of the other funds (name) that have co-invested with the first in at least one delivery organisation. It is also known the number of companies in which they co-invested (companies) and the number of investment "rounds".
For example, the fund F000405 co-invested with Coastal Ventures II LLC fund in 2 companies for a total of 3 rounds – 2 in the first and 1 in the second or vice versa, we do not have the specific detail only from this table, we must cross the data.

fund	counter	name	companies	rounds
F000217	1	Plexus Fund II, L.P.	1.0	1.0
F000217	2	Plexus Fund I, L.P.	1.0	1.0
F000217	3	Crosse+Partners - Unspecified Fund	1.0	1.0
F000217	4	Central Valley Fund L.P., The	1.0	1.0
F000217	5	Arborview Capital - Unspecified Fund	1.0	1.0
F000029	1	IFC Recapitalization Fund, L.P.	1.0	1.0
F000439	1	Overseas Private Investment Corp OPIC - UF	1.0	1.0
F000439	2	Omidyar Network Fund LLC	1.0	1.0
F000439	3	International Finance Corporation - Unspecified Fund	1.0	1.0
F000439	4	EBRD - Unspecified Fund	1.0	1.0
F000439	5	Developing World Markets - Unspecified Fund	1.0	1.0
F000405	1	Coastal Ventures II LLC	2.0	3.0
F000405	2	Frontier Fund II, L.P.	1.0	3.0

Figure 3.22 – Table _investors.

_managed_funds: this matrix provides, for each fund, a detail of the funds managed by the same management company. The variables included in this table are, in addition to the names of these funds, the size in millions of dollars, the inception year (vintage) and the "stage" where each fund is at the moment. In the figure 3.23 it is possible to note, for example, as the fund F000203, Goodwell Microfinance Development Company III B.V., is managed by the same company of the other 4 funds in the list – Goodwell Investments B.V. in this case.

fund	name	size	stage	vintage
F000203	Goodwell Investments BV - Unspecified Fund	-	Early Stage	2007.0
F000203	Goodwell Microfinance Development Company I BV	-	Later Stage	2006.0
F000203	Goodwell Microfinance Development Company II BV	-	Later Stage	2009.0
F000203	Goodwell West Africa Microfinance Development Company I	20.82	Later Stage	2011.0
F000029	Central Africa Small and Medium Enterprise (SME) Fund	12.5	Generalist	2010.0
F000029	IFC African, Latin American and Caribbean Fund	1000.0	Buyouts	2010.0
F000029	IFC Catalyst Fund, L.P.	280.0	Fund of Funds	2013.0
F000029	IFC Recapitalization Fund, L.P.	3000.0	Buyouts	2009.0
F000029	International Finance Corporation - Direct Investment Fund	-	Balanced Stage	2000.0
F000029	International Finance Corporation - North East India Fund	-	Balanced Stage	2013.0
F000029	International Finance Corporation - Unspecified Fund	-	Generalist	1956.0
F000029	IFC Global Infrastructure Fund	1200.0	Buyouts	2013.0
F000029	IFC Global Emerging Markets Fund of Funds	-	Fund of Funds	2014.0
F000029	China-Mexico Fund	1200.0	Generalist	2016.0

Figure 3.23 – Table _managed_funds.

funds: this is the first matrix that has been created and it contains all the data obtained from ImpactBase, that are mostly qualitative or quantitative variables very general and little depth, such as the inception year, the asset under management target for each fund, the committed capital and so on.

A necessary final consideration that must be made is that the matrices and the variables, or their names, present at this time – October 2018 – within the database may vary; surely the logic with which the entire database was built will not change, but it is very likely that skimming, modifications, revisions, data cleaning, elimination of any redundancies will be present in the future.

Chapter 4

Descriptive analysis and statistics performed on the database

The purpose of this chapter is to present the results obtained by analysing the data collected within the database and to introduce and illustrate the main descriptive analysis and statistics. The chapter is structured in three parts: the first focuses on the funds, the second on the companies and, finally, on the last, on the intersection between the two previous sections, therefore on the investments made by the funds in the companies.

Before starting with the analysis, it is necessary to anticipate that some cells could not be filled if the information could not be found on the three databases used; in this case the corresponding cell contains the value NULL and obviously the whole row is omitted from the analysis whether the variable on which the analysis is to be carried out is subject to this problem.

Funds	284
Companies	974
Investments	1,204
Invested capital	USD 2.602 billion

4.1 – Funds: data investigation collected in the sample

Collected capital – The first data that we wanted to extract concerns the total capital collected so far from the funds of the sample: of the 284 total funds only 207 reported this detail and the sum is USD 14.995 billion. In addition, 135 funds providing also the target size, i.e. the total amount of funding that the fund hopes to collect; crossing the two variables just mentioned, that are, the capital already collected and the target one we have the data related to 119 funds: these have so far collected USD 11.312

billion against the estimated USD 14.421 billion – over 78%, however this data should be evaluated with caution since some funds have raised more than necessary, therefore their excess capital offset those in default of the funds that have not yet managed to break even.
Of these 119 funds, it turns out that 40 – that is, more than 33% of the small sample – have collected the expected amount or even more: 20 went into par and 20 exceed the expected amount; even 2 funds raised over 150% of the budget: Bridges Community Development Ventures Fund II (founded in 2006) and Ecosystem Investment Partners III LP (2015). Out of the 40 funds that went into pair, at least 20 are in the United States of America, 8 in United Kingdom and 4 in India: this should not surprise, the predominance of these three countries will be marked throughout the study.
In addition, if the analysis is extended to the funds that have collected at least 95% of the expected funding, the count rises to 49 funds, over 41% of the 119 funds that share information on the current and the target size.

Foundation year – Regarding the year of incorporation of the various funds, the histogram in image 4.1 summarizes the situation; all 284 funds presented this data: the oldest were established in 1969 and they are 6, although the idea is that they date back to before, it is likely that the databases, in the absence of the precise data, have provided an estimation. The year that saw the most formation of them was 2013 (25 funds): coincidence the G8 year, in which the British Prime Minister promoted social impact investments.
The data of the last two years – the current one and last one – should be interpreted cum grano salis: it is very probable that online databases will take some time to update the profiles of existing funds and insert new ones, besides the current year is still not concluded.
Despite the last two columns that could be considered outliers, it is possible to note a growing trend, highlighted by the orange line; excluding this data, the trend would certainly be even more pronounced.

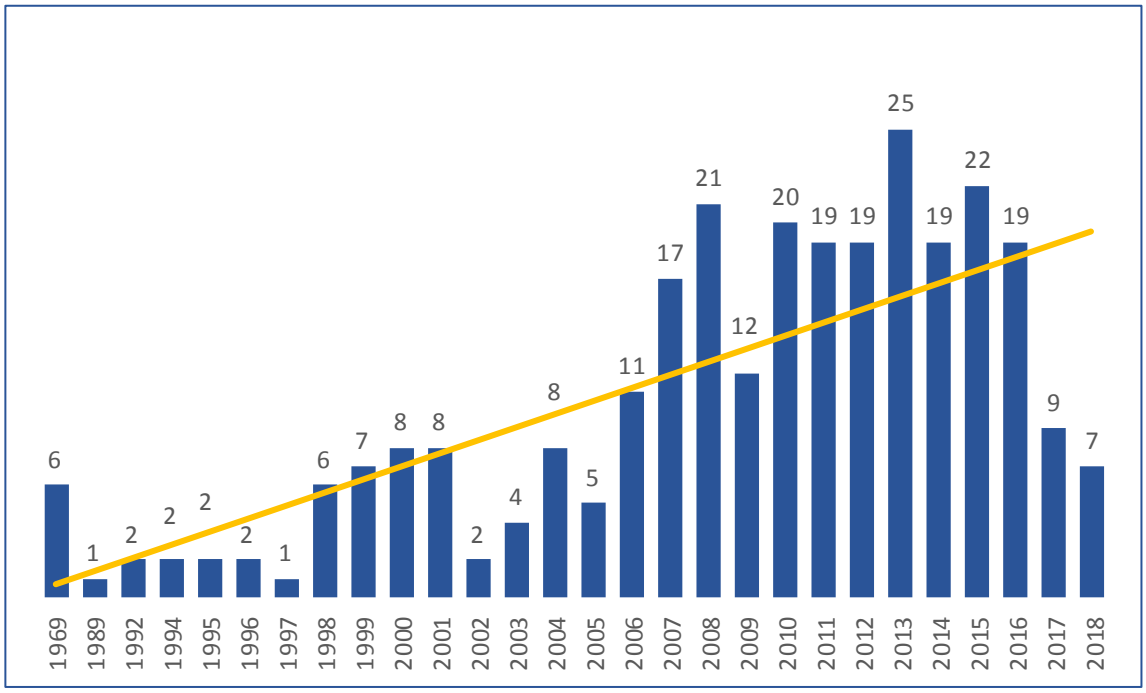


Figure 4.1 – Histogram which highlights the growing trend concerning the creation of new impact-oriented funds.

A further analysis that can be carried out is to cross the seniority of the various funds with the capital collected so far. From the image 4.2 it emerges that the most recent funds have collected considerably higher amounts than the older ones; this is obviously synonymous with a greater impulse of the impact industry, helped by numerous themed events to publicize it. Moreover, it is very probable that many new funds will mainly deal with this type of investment – indeed, many only realize impact investments. A significant increase is visible between 2005 and 2006, from USD 162 million to USD 1.473 billion.

Also noteworthy is the great upsurge of 2013, where it reaches even USD 2.377 billion, in the year that officially sanctioned the birth of this industry with the G8 event.

The drop recorded in the last few years should not surprise, it is generally normal that the newest funds have collected less than those founded some year earlier; moreover, as mentioned before, the data may not yet be updated.

Overall, however, it can be said that the increase is general, it does not concern just the funds, but it is inherent to a greater involvement of investors which regard to the socio-environmental issues and an

improvement in welfare, made possible thanks to a new type of targeted rational investments.

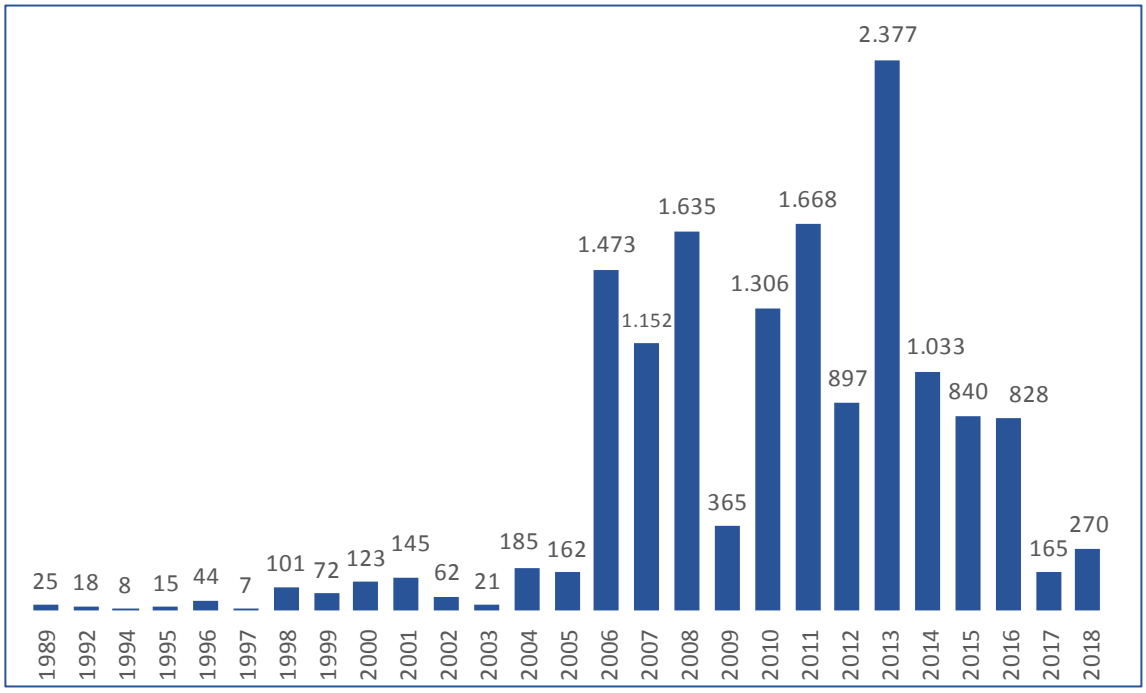


Figure 4.2 – On the vertical axis there is the amount collected (unit of measure: USD million) while the horizontal axis is a timeline.

Headquarter location – Moving on to analyse the geographic subdivision of funds worldwide, the map of the image 4.3 is of considerable help.

The funds are located in a total of 37 countries and most have their headquarter in the USA – 113 funds; followed by UK and India, respectively with 36 and 24 funds.

These 37 countries can be further divided: 16 are developed countries while 21 are emerging.

Using the same subdivision proposed by GIIN (cf. with table 2.3) we can see how 206 funds are placed in the so-called developed countries (over 72% of the total); the remaining part – 78 funds – are instead in emerging markets. The precise detail for each country is summarized in the table below 4.4.

On the other hand, if we want to study how capital is allocated at a geographical level, the total harvest – USD 14.995 billion – is divided into USD 11.671 and 3.324 billion allocated respectively in funds located in developed and emerging countries; more than 77% of the capital raised is located in funds situated in the First World, a figure very unbalanced in their favour, however justified if we think that 206 funds (72%) are located right there.

It is not surprising that the USA, UK and India have collected the highest figures, since they already excelled in the previous analysis concerning the headquarters of the funds. The detail for these three countries is USD 4.684, 4.823 and 1.101 billion respectively. It is a remarkable fact, it means that 32% – almost one-third – of the capital come from the United Kingdom. The three countries just mentioned, with a total of 173 funds, i.e. over 60% of the total, raised capital for an amount of USD 10.608 billion, more than 70% of the total.
Also noteworthy are the funds located in Canada (14 funds and USD 1.013 billion) and in South Africa (9 funds and USD 813 million).

Figure 4.3 – World map that allows to locate all the funds that make up the sample.

Name of the regions	Number of funds			
Developed countries				
East Asia	8	China: 3	Hong Kong: 3	Singapore: 2
Oceania	3	Australia: 3		
United States and Canada	127	USA: 113	Canada: 14	
Western, Northern, and Southern Europe	68	United Kingdom: 36	Netherlands: 14	France: 4
		Switzerland: 4	Luxembourg: 3	Poland: 2
		Spain: 2	Croatia: 1	Germany: 1
		Ireland: 1		
Emerging countries				
Eastern Europe, Russia, and Central Asia	8	Bulgaria: 2	Macedonia: 2	Russia: 2
		Estonia: 1	Lithuania: 1	
Latin America and the Caribbean (including Mexico)	18	Mexico: 6	Peru: 4	Costa Rica: 3
		Nicaragua: 3	Colombia: 1	Haiti: 1
Middle East and North Africa	3	Jordan: 2	Georgia: 1	
Southeast Asia	2	Cambodia: 2		
South Asia	24	India: 24		
Sub-Saharan Africa	23	South Africa: 9	Mauritius: 8	Kenya: 3
		Botswana: 1	Ghana: 1	Uganda: 1

Table 4.4 – Subdivision of funds between developed and emerging countries with detail for each geographical region.

Investor type – In terms of the type of funds present in the sample, i.e. the topic called "Fund Investor Type" on Thomson ONE Banker, we can note that the overwhelming majority (191) are "independent private partnership": according to the official website glossary, in this category are included all the organisations and independent funds, meaning not being part of any company – corporate funds – that make investments in private equity collecting part or all the capital needed by external investors.

25 are funds related to community or business development programs: usually they are private equity funds made up of communities and local organisations whose purpose is to make the interest of their area and favour local development and welfare. 20 are linked to banking or financial institutions, 15 are angel funds, 8 are corporate funds, 8 belong to investment banks and 5 are evergreen funds, already introduced during the first chapter.

It is not surprising that the majority are independent private funds: the existing social stock exchanges are few and new and most of the funds shares are not publicly traded, often it is necessary to be part of a fund of funds to invest directly. This also testifies the great illiquidity that characterizes this type of investment.

For the sake of completeness, it should be added that there are also 4 investment advisory affiliated funds, 3 funds that fall into the "endowment,

foundation or pension funds" category, 2 funds of funds, 2 governmental funds – that is, set up by the government and therefore publicly owned – and finally, 1 fund set up by universities or colleges.
What has just been described is summarized by the histogram in figure 4.5.

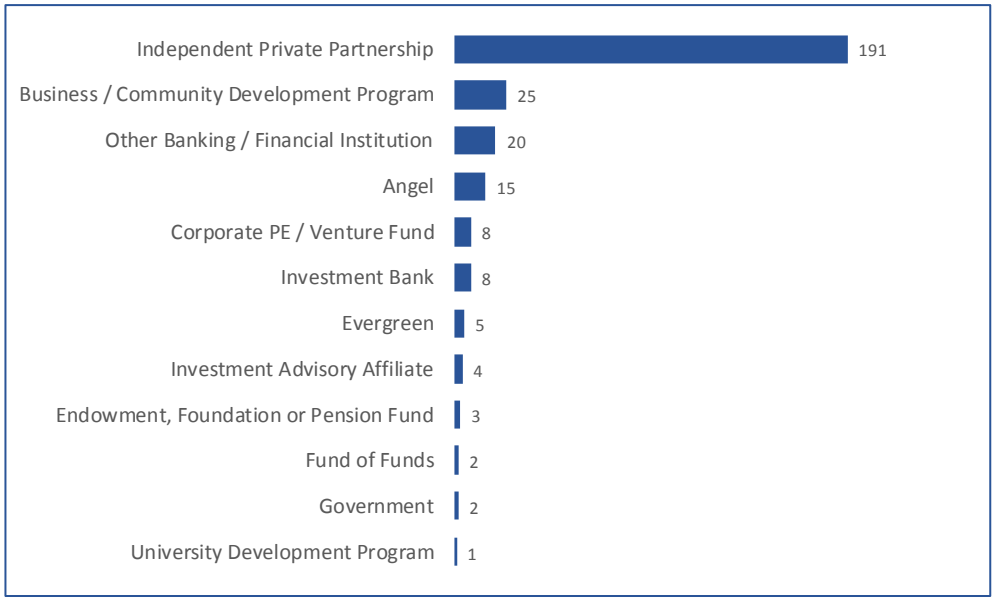


Figure 4.5 – Detail regarding the type of funds that are part of the sample under examination (total funds: 284).

Fund status – Another significant variable that distinguishes funds is the "status" and four different types were found in the sample:

- 143 are funds that "had final close": of these only 61 reported the size reached and the target at the level of raising capital: 35 have collected at least as expected, this means that of the 40 total funds that have reached the target 35 have closed the raising of capital. A very significant fact is that these 35 funds are quite recent, just think that the newest date back only to 2016 while the "oldest" were founded in 2001.

  This highlights more how the impact industry and oriented investments are taking on ever greater importance. Moreover, if the analysis is extended also to funds that have collected more than 75%, the count rises to 48 funds;
- 115 funds had officially completed the raising of capital and have made at least one investment; however, they are still collecting funding – Thomson ONE Banker labels them as "had close, still raising". They are also very recent, the oldest date back to 2000 while

the newest are of this year, as many as 5, and they have already collected almost USD 270 million;

- 13 open funds that are still raising capital – "no close, still raising"; be noted as they are all very recent funds, fluctuates in a range 2009-2017;
- 13 are finally defined as "liquidated", they are therefore closed and no longer have any investments in companies, funds or organizations. They were founded in a rather old-time window – 1989-2001 – if compared with the most recent investments and they only collected USD 284 million, a very low figure, compared to the USD 270 million referred to in the second point.

Fund Stage – Speaking instead of the type of investments that each fund realizes there are many different categories.

109 funds are labelled as "balanced stage": the most numerous figure, with this expression we refer to the funds that make investments in companies in a variety of stages of development – from seed to later stage.

61 funds invest in companies in "early stage" i.e. start-ups with interesting ideas or concepts that however do not sell or supply any product or service, being in an initial phase. Usually capitals are used for step-up support in capabilities.

31 are defined as "generalist", with this expression we indicate the funds that make an equal amount of venture capital and buyout investing.

24 "buyouts", this phase indicates the funds which they realize leveraged buyout, management buyout or acquisition investments. These operations are realised by using the debt in addition to the equity in order to exploit the financial leverage and increase the potential return on investments. It should also be remembered that this stage also includes the funds that make infrastructure investments.

22 funds invest only in mature and started companies (later stage); companies that maybe have problems and inefficiencies that affect their profits and only need an internal reorganization. Often the funds after intervening in such companies disinvest through IPO (Initial Public Offering) – if they own the majority of the company – or by selling their shares to potential interest buyers.

14 "seed stage": these are funds that invest in very new companies – even younger than those in early stage – and they need capitals, perhaps for

product development, surveys or market research, building a management team and developing a business plan etc.
10 funds are labelled as "mezzanine stage", they make investments using a type of debt that has intermediate priority in the capital structure of the company.
Under the label "other private equity/special situations" are considered funds (5) that are not classifiable in other ways, as for example publicly traded funds, hybrid funds or hedge funds.
For the sake of completeness, we also report 3 funds of funds, 2 funds that invest in the energy sector – oil, gas, electric companies and so on – and 1 "turnaround/ distressed debt": funds that invest in underperforming companies or that are in bankruptcy proceedings or already bankrupt; this activity can be financed indifferently through equity or debt, but often the shares are purchased with a heavy discount due to the critical situation that the company is passing, moreover the fund has an active seat within the company board or a management position.
The last two remaining funds present particular stages – defined as core and opportunistic – that have not been described since the Thomson ONE Banker glossary did not include these definitions; these are respectively the Leopard Myanmar Property Fund and Alsis Mexico Opportunities Fund.
Image 4.6 summarizes what has just been described.

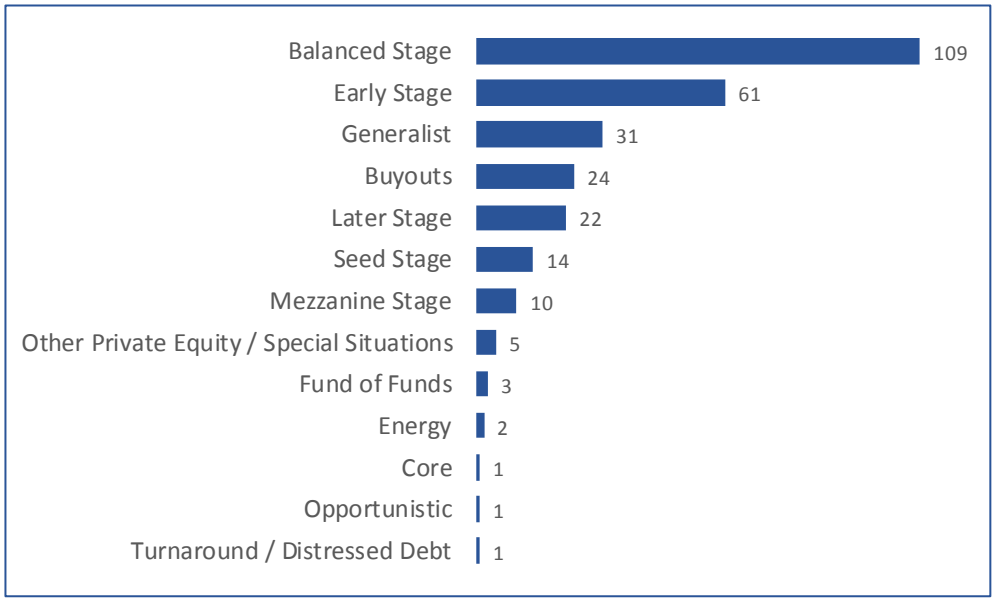


Figure 4.6 – Detail concerning the status of the funds in the sample.

Management firm – the companies that manage the funds of the sample are 116, which means that the same organization is likely to manage more funds at the same time.
The data available confirm this: 61 companies manage at least 2 funds, the company that manages more funds is called Small Enterprise Assistance Funds (SEAF) and has a portfolio of 28 funds – only in our sample.
Also noteworthy are Creation Investments Capital Management LLC (9), Sandbox Industries LLC and Bridges Fund Management Ltd (both 8), NewWorld Capital Group LLC (7) and gradually decreasing.

Sub-sample analysis: ImpactBase funds – Further analysis was conducted on a sub-sample: in the specific on funds only whose profiles were extracted from ImpactBase.
The first variable of interest is the Internal Rate of Return (IRR). 197 funds present the IRR target, of which 2 funds do not have an IRR to which they wish, while 1 fund has even 40.00%. The largest occurrence is represented by the values 15.00% and 20.00% which appear respectively 29 and 42 times.
By doing a weighted average between IRR and the number of occurrences, the result is 16.59%. It should be remembered that this value is the rate that makes Net Present Value (NPV) null, so the bigger it is, the better it is; in fact, since the threshold value is higher, the higher the interest rates are included in the range of values underlying it – between 0 and the IRR in practice.
It should also be added that, at the monetary level, it is the amount earned by a Limited Partner after fees, carry and eventual conversion to USD.
The figure 4.7 illustrates what has just been described
It is also interesting to conduct an in-depth analysis of the commissions for the managers – General Partners – of the funds, specifically the values introduced during the first chapter: management fee and carried interest.
Regarding the management fee 216 funds reported this value; it is in a range from 0.00% to 33.00% (Bethnal Green Ventures LLP Fund). The results of the analysis confirm what was introduced with the literature: the values that go for the greatest are 2.00% and 2.50% respectively with 83 and 47 occurrences. The weighted average between fees and observations is 2.38%. excluding the outlier value, the fee drops to 2.23%.

At the level instead of carried interest there is information regarding 202 funds. In this case it oscillates in a range that varies from 0.00% to 30.00%; the highest occurrence occurs for the value 20.00% – 163 funds. For the sake of completeness, the value deriving from the weighted average is also provided in this case: 18.20%.

Based on what has been found on a sub-sample of our database, it can be said that the results are perfectly in line with what was found at the level of literature; in fact, refer to the first chapter, paragraph 1.4, for the description of the compensation structure 2/20, in this case we are very close to the theoretical model with the following result: 2.38/18.20, at the limit, excluding the outlier value: 2.23/18.20.

It is interesting to conclude this small parenthesis by focusing on the hurdle rate, the minimum return guaranteed to investors.

153 funds provide this information: the minimum is 0.00% while the maximum is 20.00%, most of the funds guarantee however 8.00% – 67 funds. The weighted average in this case turns out to be 6.52%. In this context there is no comparison parameter with the literature being a value that often changes from fund to fund, so that some did not provide a numerical value but claimed that it varied depending on the investment or other parameters.

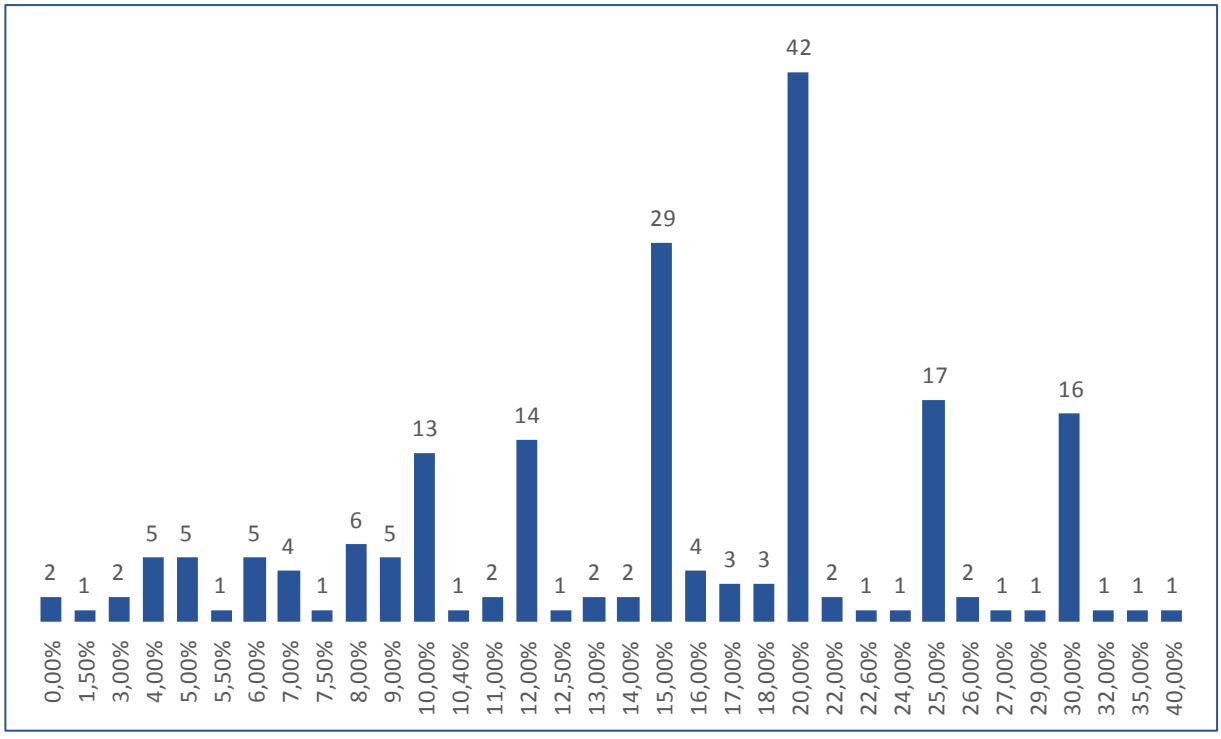


Figure 4.7 – On the horizontal axis there is the internal rate of return while on the vertical axis the number of occurrences for each rate.

4.2 – Companies data and their distribution

Collected capital – As it was also with funds, the analysis begins by examining the money raised by the companies that make up the sample. 725 companies share information on the total capital raised so far: USD 21.966 billion, collected through over 2,400 investment rounds and 6,000 separate investments.

Foundation year – It is reported in the image 4.8 the detail of the 755 companies sharing information about the date of foundation: the two oldest date back to the nineteenth-century and are the Royal College of Art (1837) and Geppert GmbH (1896).
As can be seen, also in this case there is a significant increase in the foundation of new companies involved in this industry: the richest years are 2008 and 2011 respectively with 53 and 47 new companies.

It is possible now to analyse the amount collected by the companies of the sample compared to their foundation dates, as done for the funds (cf. figure 4.2); from the image 4.9 it is easy to see how the above reasoning is valid also for the present analysis. In fact, the companies that have collected the most money are the most recent ones, often founded precisely with the intent to carry out mainly or solely impact investments.
The companies founded in 2007 and in 2010 are those that have raised more capital to date, respectively with an amount of USD 2.574 and 2.569 billion; in general, however, it can be observed that since the end of the last century, the capital collected has considerably increased, reflecting the novelty of this type of investment.

Also, in this case it should not scare the downturn recorded in the most recent years.
It should be noted that the total amount is slightly lower – USD 20.593 billion – than previously recorded since to carry out this analysis we need to cross two data, foundation date and collected capital, and the companies that supplied them both were obviously less of the two isolated partials; the same total will be registered in the subsequent analysis concerning the capital collected by sector and the date of foundation of the enterprise.

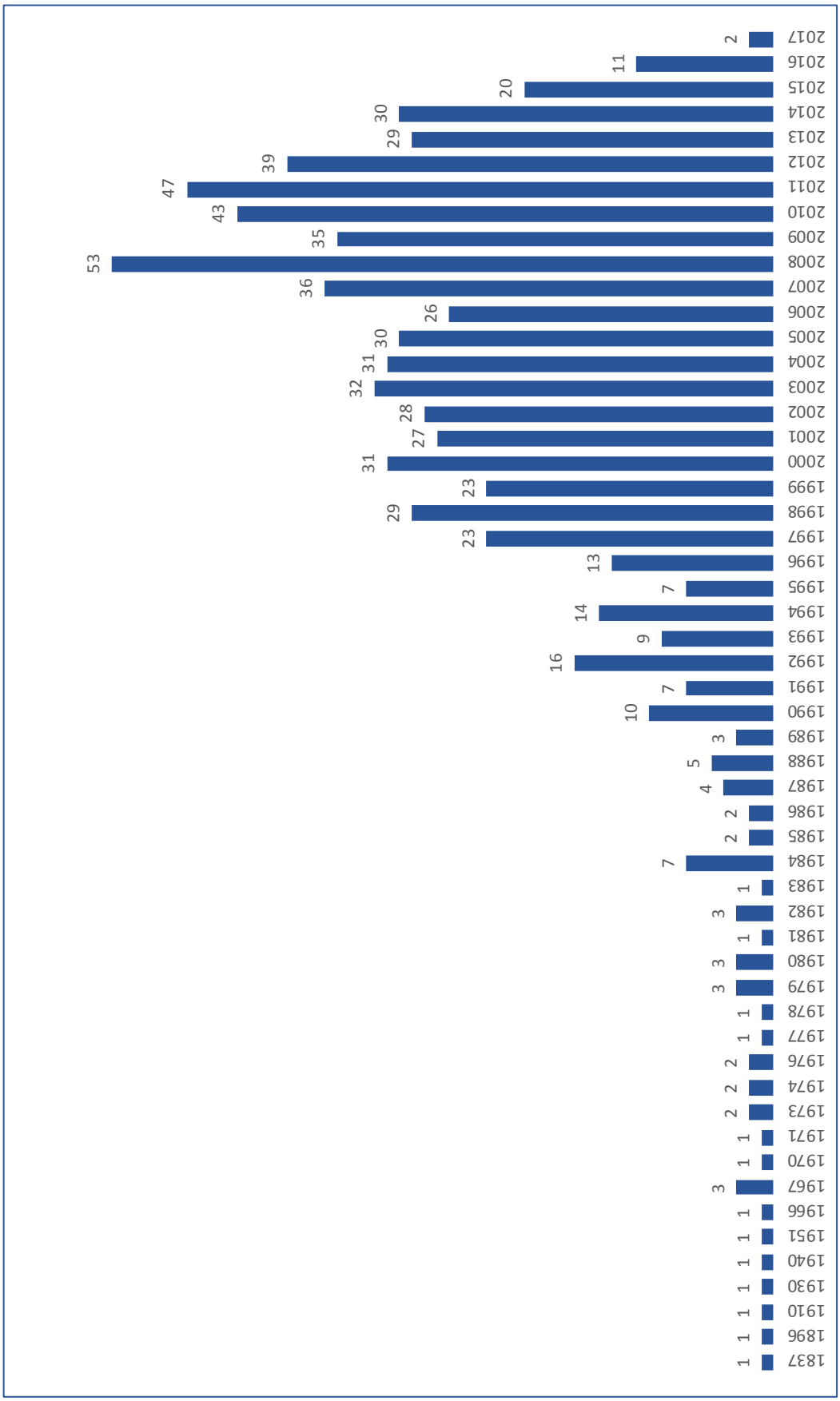


Figure 4.8 – Detail of the foundation date of 755 sample companies.

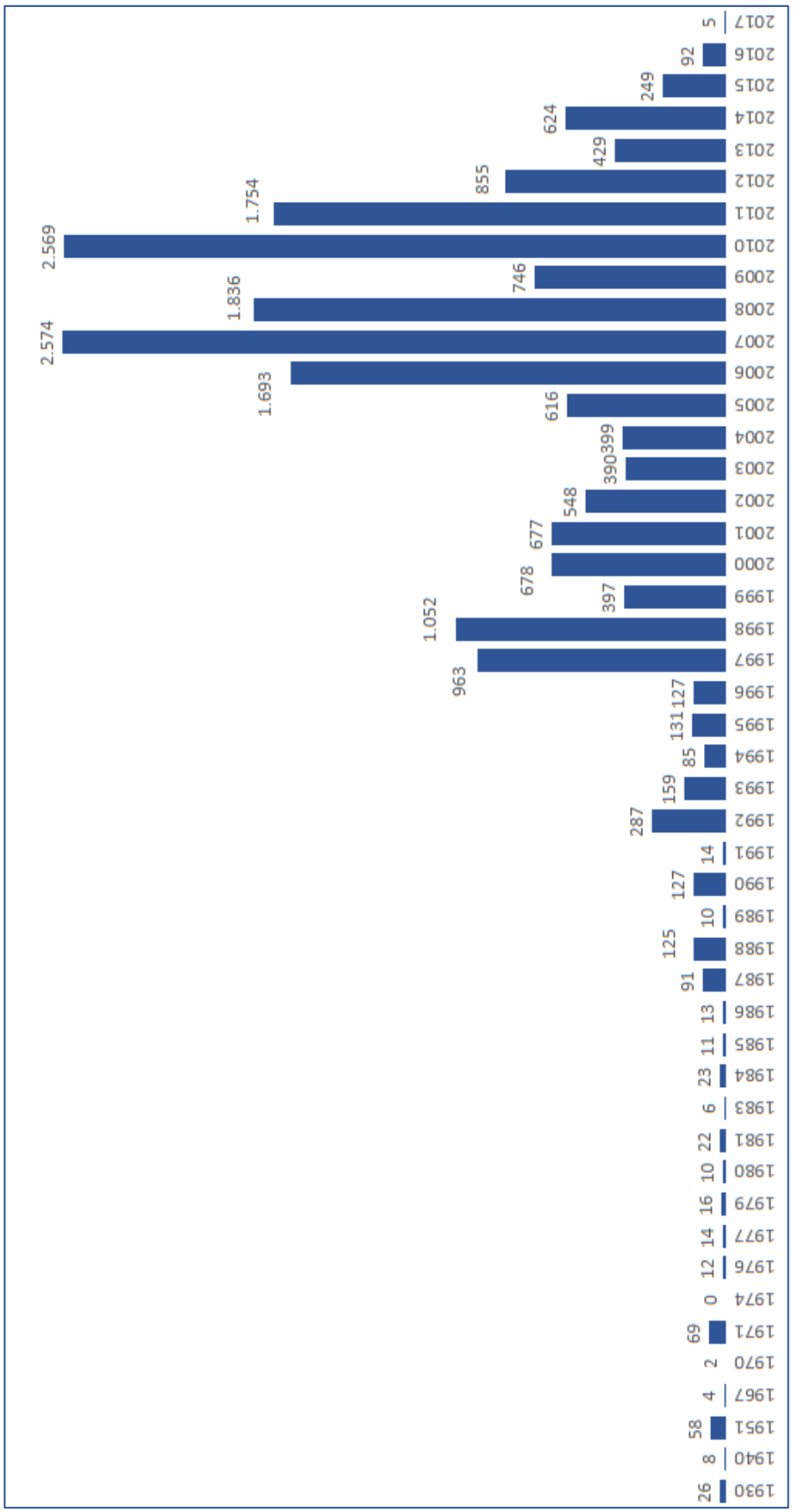


Figure 4.9 – On the vertical axis there is the amount collected (unit of measure: USD million) while the horizontal axis is a timeline.

Headquarter location – As regards to the location of the companies, it can be seen from the map in the image 4.10 how their offices follow the trend of the headquarters of the funds: the first three positions are in fact always occupied by USA (396), India (145) and United Kingdom (114), the latter two have reversed their position compared to the similar analysis of funds. It should be noted that many companies are in Canada (32), Mexico (25), France (23), Germany (16), Kenya (13) and South Africa (11).

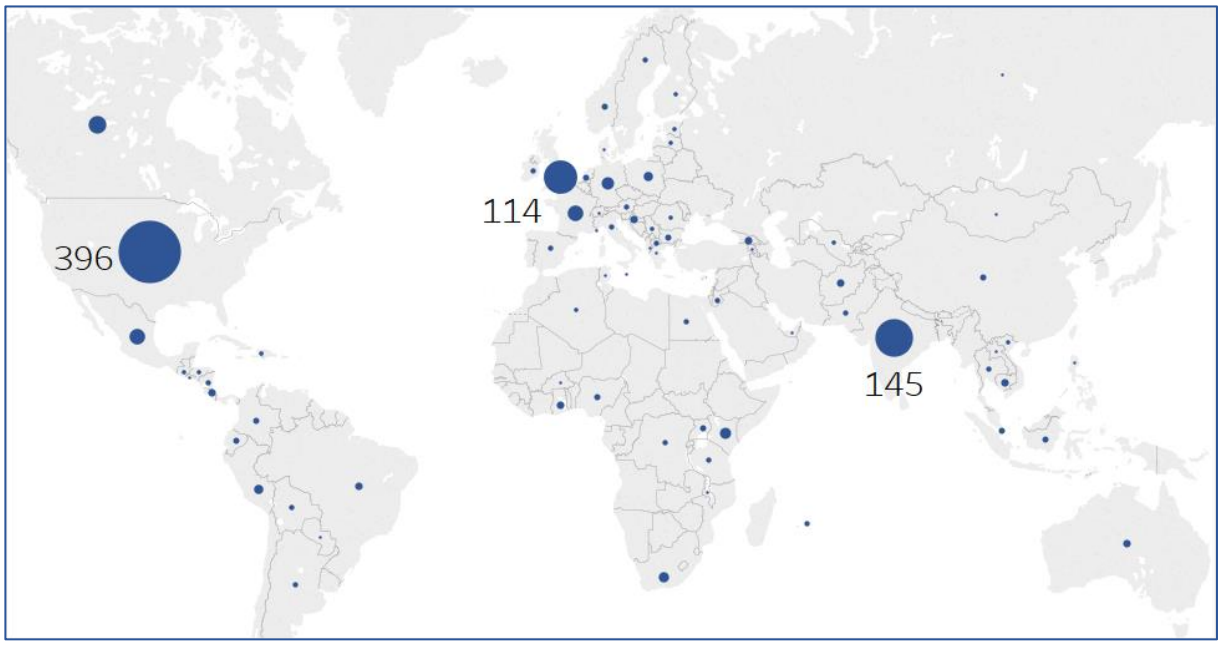


Figure 4.10 – World map that allows to locate all the companies that make up the sample.

In this case too, to further deepen the data, these companies are spread over a total of 73 countries, 23 developed and 50 emerging, 643 in the former and the remaining 331 in the latter. So, 66% of companies are located in the so-called First World countries: about two-thirds of the companies are in 32% of the countries of our sample (23 developed countries over a total of 73). This confirms what is seen not only at the level of literature but also reiterated by the annual survey of GIIN: that is, unlike what it could be thought when we approach the impact investments – and more generally, to the whole world of charity – many socio-environmental problems afflict the most developed countries. It is not by chance that the latter are targets of numerous interventions, as confirmed by the investigations and the analyses carried out on the information of the sample.

Analysing the data in aggregate it can be noted how the subdivision of capital between developed and emerging countries is really different; the companies located in the first countries collect over USD 16.639 billion (76%) while those located in emerging countries collect only USD 5.327 billion (24%).

A further reconfirmation of what has just been said is obtained by comparing the capital raised by companies at a geographical level: American companies have raised USD 12.174 billion (over 55% of the total capital) and those located in the United Kingdom USD 2.420 billion (11%). Therefore, over 66% of the raised capital is located in companies with headquarters located in one of these two countries, the remaining 34% is distributed among the remaining 71; a highly unbalanced figure, especially considering that Indian companies have raised USD 4.326 billion (20% of the total). Therefore, excluding this data, only 14% of the money – around USD 3.046 billion – went to the remaining 70 countries.

It should however be considered that these three countries collect 86% of total capital, but also host 655 companies (USA: 396, India: 145 and UK: 114), over two-thirds of the overall sample.

The size of companies should also be considered: they are not all the same, it is normal that the larger, more famous and more established ones collect more capital comparing to the others; moreover, it should not be surprising how United States and United Kingdom tend to excel in almost all the analysis carried out so far: they are market-based countries, therefore it is normal that there is a high number of subjects involved – investors, funds and companies – and capital moved.

Table 4.11, like table 4.4 for the funds, shows the complete detail of the number of companies located in each country.

Name of the regions	Number of companies					
Developed countries						
East Asia	9	China: 5			Singapore: 4	
Oceania	7	Australia: 7				
United States and Canada	428	USA: 396			Canada: 32	
Western, Northern, and Southern Europe	199	United Kingdom: 114	France: 23		Germany: 16	Poland: 9
		Croatia: 6	Netherlands: 5		Norway: 4	Austria: 3
		Ireland: 3	Italy: 3		Spain: 3	Sweden: 3
		Finland: 2	Denmark: 1		Greece: 1	Malta: 1
		Monaco: 1			Switzerland: 1	
Emerging countries						
Eastern Europe, Russia, and Central Asia	21	Bulgaria: 5	Macedonia: 3		Estonia: 2	Latvia: 2
		Romania: 2	Serbia: 2		Uzbekistan: 2	Albania: 1
		Mongolia: 1			Russia: 1	
Latin America and the Caribbean (including Mexico)	72	Mexico: 25	Peru: 9		Brazil: 6	Costa Rica: 6
		Ecuador: 5	Colombia: 4		Argentina: 3	Bolivia: 3
		Nicaragua: 3	Guatemala: 2		Haiti: 2	Honduras: 2
		El Salvador: 1			Paraguay: 1	
Middle East and North Africa	17	Georgia: 6	Egypt: 3		Jordan: 3	Algeria: 2
		Armenia: 1	United Arab Emirates: 1			Tunisia: 1
Southeast Asia	18	Cambodia: 7	Indonesia: 4		Thailand: 3	Vietnam: 2
		Laos: 1			Philippines: 1	
South Asia	154	India: 145	Afghanistan: 6		Pakistan: 3	
Sub-Saharan Africa	49	Kenya: 13	South Africa: 11		Ghana: 6	Nigeria: 4
		Uganda: 4	Congo: 3		Mauritius: 3	Tanzania: 3
		Burkina Faso: 1			Malawi: 1	

Table 4.11 – Subdivision of the companies between developed and emerging countries with details for each geographical region.

Company status – Instead at the level of the current status of companies, it is summarized by the "company status" field on Thomson ONE Banker; table 4.12 summarizes the data: noteworthy as 780 companies are currently active (over 80% of the sample), 35 have become public and 8 are no longer in business.

Active	780
Acquisition	76
LBO	53
Went public	35
Pending acquisition	14
Defunct	8
In registration	4
Merger	4

Table 4.12 – Current status of 974 companies in the sample.

Firms sectors – An unmissable analysis is that concerning the sectors in which the companies of the sample operate, but before going to the analytical part, it is better to illustrate the logic with which the companies were grouped. The subdivision used is very similar to that adopted in the GIIN surveys, taken as a starting point, and sees a total of 12 different sector categories. Generically the logic has been to allocate every company in the sector in which it realizes its own goods or services but concentrating the attention on the user or final consumer. For example, a company that builds a computer platform for consultation between doctors and patients has been classified in "healthcare and social aids" category, although its product is computerized.

1. Chemicals and biotechnologies: here are all companies that produce generic chemicals – not for example pharmaceutical or agricultural, allocated in their respective categories – or research in biotechnological field, even in this case not attributable to other sectors;
2. Education: provision of qualified personnel for education, textbooks and material, but also services such as pre and post school, afternoon study aimed at recovering deficiencies or simply recreational ones; also included services such as the efficiency of school computers (by external companies), teaching of skills and coaching in the start-up of their own activities, for any level of

education and age. This category also includes all companies that make websites, software or platforms useful for students and teachers – for example to share material, projects, case studies, video lessons, school-family information etc;

3. Energy: clean energy from renewable sources (wind, solar, photovoltaic, geothermal, biomass, linked to tides and dams, etc.) and that obtained traditionally (coal and fossil fuels); energy producers are part of this category, as well as companies that supply it and make plants of all kinds;
4. Environment: this category is very wide, includes companies that deal with the recycling of waste, oils, batteries and industrial materials, for purification, filtration and decontamination of water (including water purification in order to allow to drink it), sludge, mug and air; systems for control and reduction of greenhouse gas emissions (GHG). Here there are also included companies that make and/or sell products made from recycled materials or from fair trade, those that make products to reduce waste and consumption and finally, all companies that deal with restoration and sustainable management of forests;
5. Financial services (excluding microfinance): this category includes all products and services offered in the banking, financial, pension and insurance sectors, including leases and applications that allow to connect into bank accounts to the smartphone, simplifying transactions and payments;
6. Food, agriculture, breeding and fishing: here are all the companies that directly produce edible products (both agricultural and industrial) or that resell them or distribute them to the final consumer, including the catering sector; also, companies that manage farms or fish have been included. For the sake of completeness, all the software and services related to this sector have also been considered: for example, support to local farmers, production of specific fertilizers and chemical components useful only for agriculture, production and installation of irrigation systems and sensors to keep under control the soil moisture level, software and tools to manage production, inventory levels, processing cycles and field treatments and so on;

7. Healthcare and social aids: provision of medicines, sterile and hospital materials, construction of hospitals, clinics, nursing homes or research centres to treat diseases; all the health services of subsidies, prevention, those for children, the elderly and even companies that underwent health and life insurance were also included. Pharmacies, centres for developing new drugs or treatments are also part of this category;
8. ICT: it is the acronym of Information and Communications Technology and it includes all the companies that make infrastructures or applications for telecommunication services, such as telephone and internet networks;
9. Manufacturing: a very wide category which includes all manufacturing products not directly sold to the final consumer (those fall into "others" category); therefore, it ranges from drones, to the realization of machines for the movement of the ground, passing through mechanics and precision components, lenses, microscopes, radar, etc;
10. Microfinance (including housing): access to credit and basic financial services, such as first access to savings accounts; for convenience, the few companies specializing in providing homes to individuals with low income have been included in this category, as they often also provided microcredit services;
11. Service provider: this is the most important category, here all the companies that realize services that do not belong to the others category, including tourism, transport, mining, construction, employment agencies, marketing, logistics, consulting and so on;
12. Others: here finally there are companies that sell accessories, commercial and retail goods of all kinds.

Moving on to the actual analysis concerning the sectors, image 4.13 summarizes how the firms of the sample can be divided into the categories previously identified; all companies present this data.
Most companies deliver services (191), most of which are mainly informatic-based services, for example the creation of software, sites, applications or platforms of all type. Then there are three very important sectors, the one concerning the primary sector – food, agriculture, breeding and fishing (145)

– the one concerning health (133) and the one regarding financial services excluding microfinance (103).

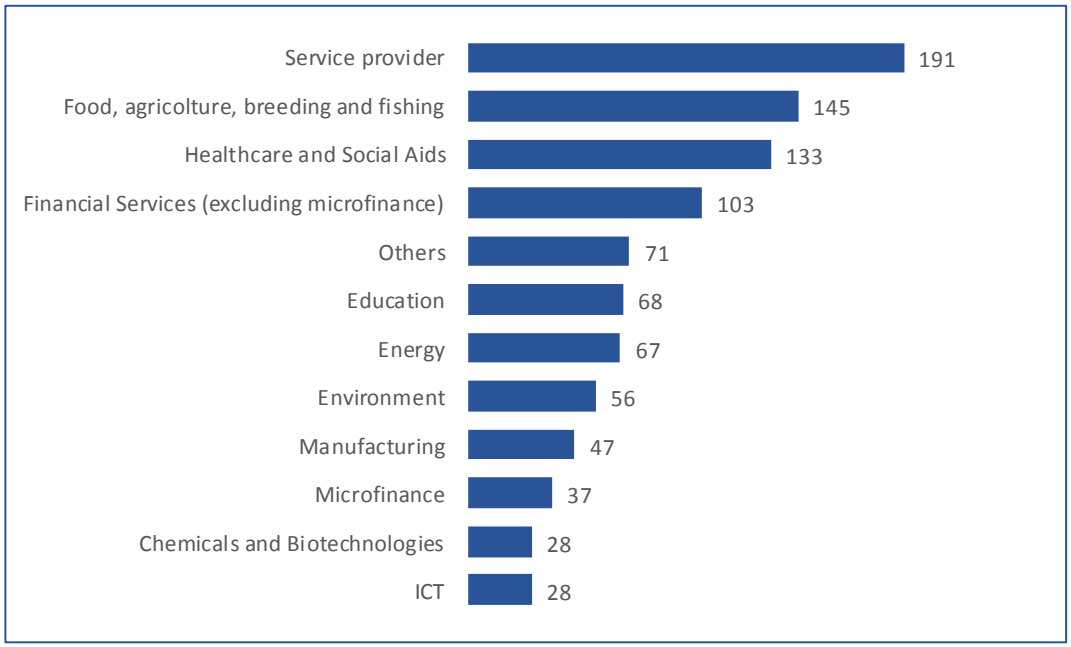


Figure 4.13 – Subdivision of companies by sector.

After having seen the geographical subdivision of the collected capital it is interesting now to observe how they are divided at the level of each sector. Image 4.14 summarizes the situation.

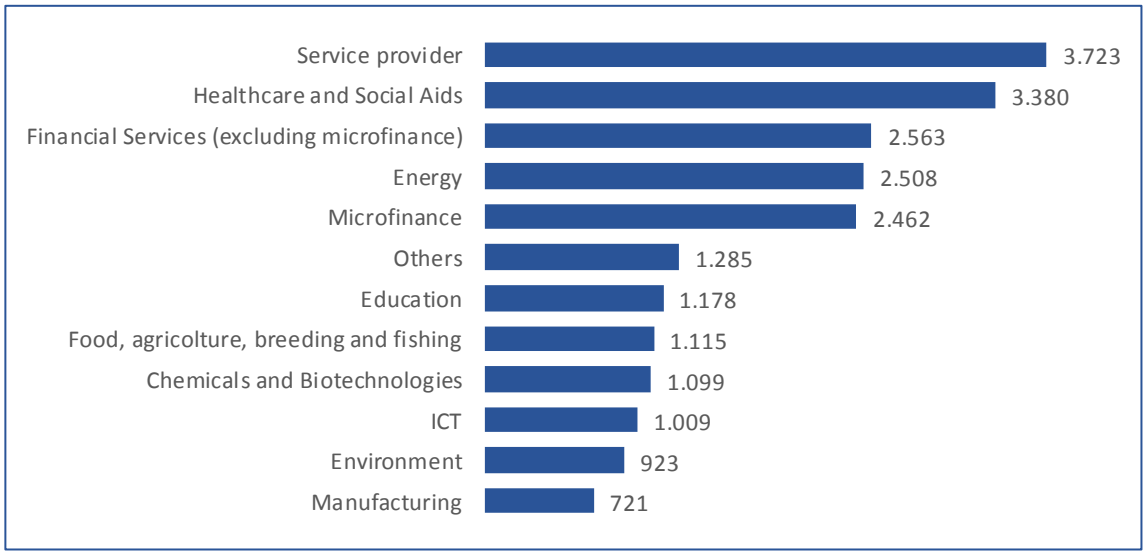


Figure 4.14 – Subdivision of capital by sector (unit of measure: USD million).

As you can see, the capital is roughly divided into three macro-areas; the provision of generic services and the healthcare sector occupy the first echelon with capital plenty exceeding USD 3.000 billion. Financial services,

energetic sector and microfinance are positioned immediately below – each collects approximately USD 2.500 billion.
All the other sectors are located below: from just under USD 1.300 billion down. The latter figure belongs to the "others" sector, made up mostly of shops, retailers and companies that sell goods directly to the final consumer; with products that obviously do not fall into other sectors – so no food for example.
The numbers that hit the most are those concerning the energy sectors and above all microfinance. Regarding the latter, only 37 companies provide products and services linked to it but move capital for USD 2.462 billion; this should not surprise: even from the results of the survey proposed by GIIN this category has obtained an excellent placement. It is one of the most important sectors, together with education and healthcare, as it provides tools as micro-insurance, micro-leasing, housing and microcredit; a whole series of products and services provided to individuals who are considered non-solvent and therefore would not have access to the canonical financial services linked to the banking, insurance and pension sectors. In the emerging countries the most widespread service is microcredit that consists in granting small loans – often equivalent to a maximum of a few tens of dollars – to small local entrepreneurs, such as artisans, traders or growers, who need them to start a new activity or improve what has already been undertaken; this tool allow to realize the so-called social inclusion, realized also through education and work, in this way it is avoid that the economically weaker sections of the population remain marginalized from basic services. This has a double response: first, the purpose is to redistribute wealth by reducing the large gap that often exists in these countries among the different social groups, secondly the goal is also to activate the economy through these entrepreneurial incentives.
Also, the energy sector has important numbers, 67 companies for USD 2.508 billion moved. It should not be surprising that these categories, together with the top ones – healthcare and financial services – have a particularly high capital turnover: these are sectors of primary importance, being basic services or products to lead a normal life, limit possible marginalization and inefficiency and, above all, allowing the population to carry out activities capable of moving the economy and national development, as just mentioned.

The "service provider" category plays a key role in the database, as it is the widest category since it includes all the companies that make services of any kind, not related to other sectors; there are 191 companies for a total of USD 3.723 billion collected.

A further study consists in highlighting how the capital collected by the companies is divided not only by sector but also considering the year of foundation of the company.
What emerges is that most of the cash moved has been picked up by new companies; from image 4.15 it can be seen how the blue area of the histograms – the one that includes companies born from 2000 to today – is the most extended. This further contributes to point out how this industry is very dynamic and constantly growing and evolving.
It should however be pointed out that total capital does not coincide perfectly with those of image 4.14 because unfortunately some companies did not share the information necessary for this analysis: year of foundation and capital collected so far; for this reason, the order is slightly different than the one seen previously.

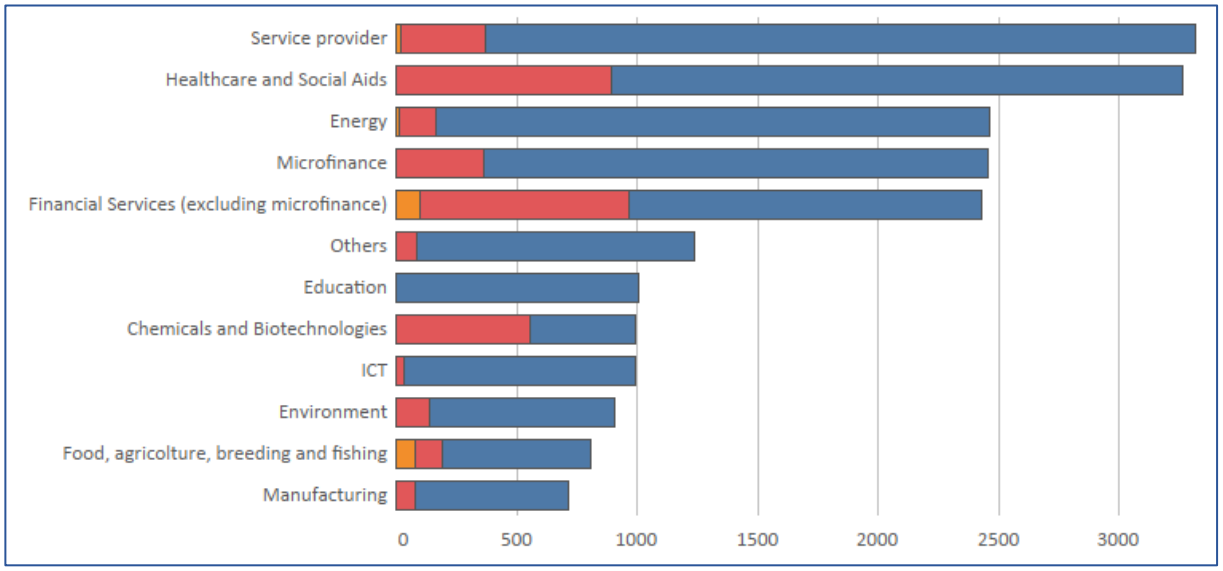


Figure 4.15 – Subdivision of capital collected by sector and by year of foundation of the enterprise. In orange the capital raised by the companies founded before 1980, in red those founded from 1980 to 1999, in blue those founded from 2000 to today (unit of measure: USD million).

Finally, in order to realize a cross between the capital raised at the sector level and the geographical position of the company, there is a very heterogeneous condition, since the money raised by the companies for each

sector varies greatly depending on the country in which the analysis is carried out.

The research focuses on the three main countries of the entire study – India, UK and USA – since they handle more than 86% of all capital.

In the USA – where companies have raised USD 12.174 billion – the most relevant sector is healthcare, with USD 2.901 billion, followed by services with USD 2.224 billion and energy with USD 1.823 billion.

In United Kingdom the situation is different: the sector in which it is more invested is ICT that collects USD 852 million, compared to the total USD 2.420 billion collected in the country; followed by the financial and services sectors, respectively USD 376 and 369 million.

The situation is very different in India where the sectors driving the investments are those concerning microfinance and financial services respectively with USD 2.346 and 1.386 billion – of the total of USD 4.326 billion, over 86% of the capital collected is used in more or less extended financial sphere.

What emerges from the latter analysis is that, depending on the country in which the investments are made, the sector and its target theme change; in developed countries the investments are mainly targeted at services or new and niche sectors and tend to cover the full range possible. For example, in Germany USD 307 million have been collected, of which 266 only for the energy sector.

In emerging countries, on the other hand, priority is given to the sectors that can better guarantee access to basic services; here are explained the large numbers concerning microfinance – and microcredit in the specific. Access to credit by all individuals is essential to ensure that local entrepreneurship is initiated, especially at rural level, and so that the population can take care of themselves and access inclusion services such as telecommunications, transports and so on; in short, this explains the reason why microfinance sector is usually one of the first to develop and raise capital in developing countries.

Image 4.16 summarizes what has just been illustrated, reporting the sectorial detail in the 3 main countries: India, United Kingdom and United States of America.

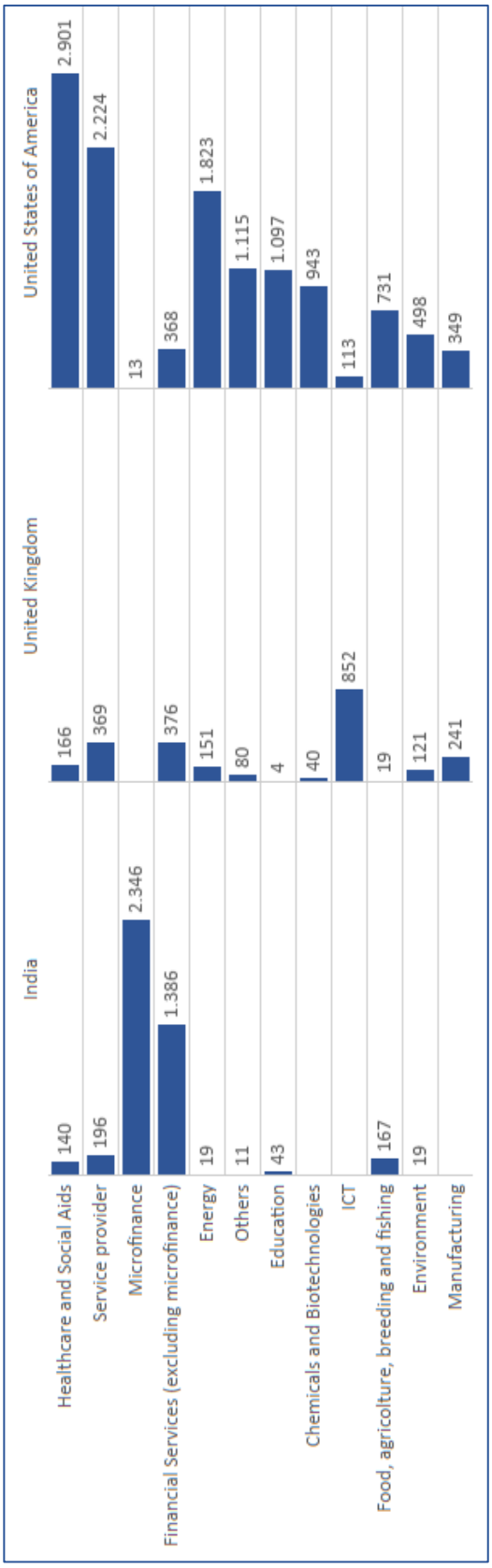


Figure 4.16 – Detail of the capital collected by sector for the three most involved countries: India, UK and USA (unit of measure: USD million).

4.3 – Investments analysis

This paragraph is entirely dedicated to investments: the funds of the sample have made 1,204 (divided into 1,169 rounds) in the only companies analysed, moving overall around USD 2.602 billion. Important numbers if compared to USD 8.338 billion collected, in total, by the same companies but also by funds not presented in the sample and therefore probably not impact-oriented; in short, almost one-third of the capital raised by companies to make their investments comes from social-impact funds listed in the database.
It is important to specify that investments are intended as different transactions, but not necessarily carried out in different companies: for example, if two different funds invest in the same company, two investments are obviously counted, regardless of the invested capital – that can be the same – and when the transaction took place – at least the same round of investment.

The funds are that made effective investments are 181; among the others someone has not yet undertaken, for others Thomson ONE Banker did not present the information, perhaps because it was not shared at the origin by the fund itself.
Investments have obviously been made in 73 countries, since the 974 companies in the sample are spread over as many countries.

Annual investments – Following a very similar structure compared to the previous paragraphs, the first study is aimed at examining the number of investments made annually; image 4.17 presents this detail. As can easily be seen, investments have increased considerably over the years, peaking in 2013, the year of the G8, and then permanently maintaining a higher share than in previous years. Even 2007, the year in which impact investments were coined, would seem to be the year in which the trend starts to rise.
As always, we must consider that the two last years, the one under way and the one just concluded, may not exactly reflect the reality for obvious reasons in terms of updating the databases.

This result is undoubtedly a consequence of the strong momentum that this industry has been gaining in recent years, as underlined by many previous analyses to the present.

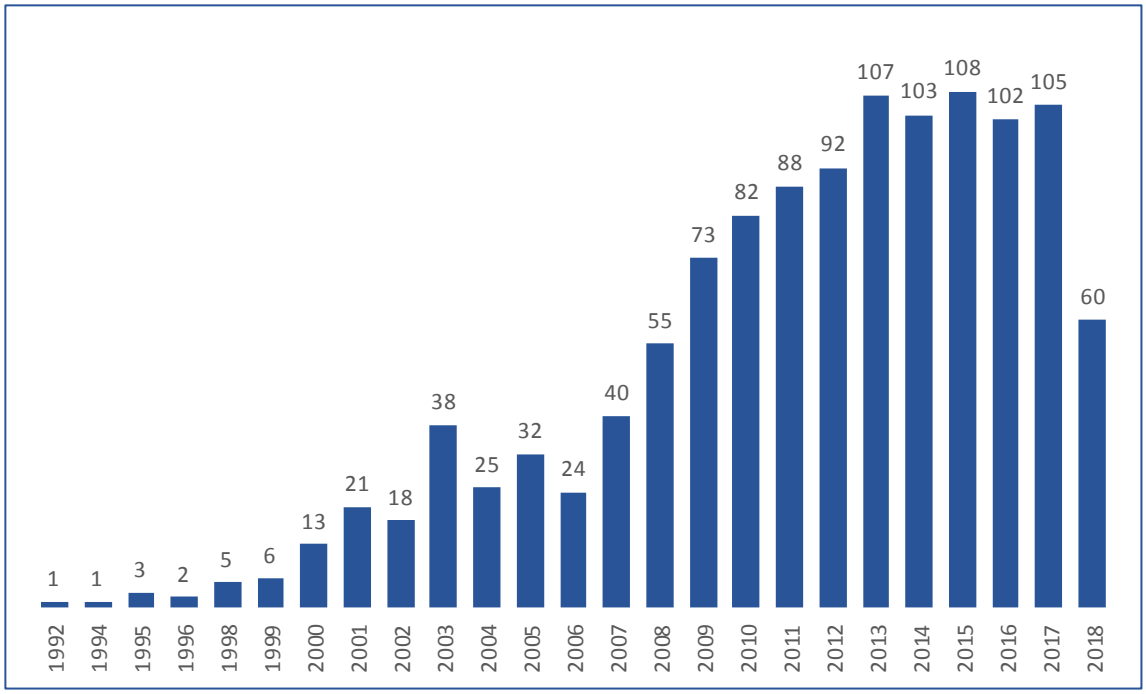


Figure 4.17 – Histogram that summarizes, for each year, the number of investments realized, total: 1,204.

From a more in-depth analysis, it can also be noted that not only investments increased, but also the number of funds involved; the image 4.18 shows it: over the years, especially in the most recent ones, the distinct funds that have invested in this new industry have increased significantly.

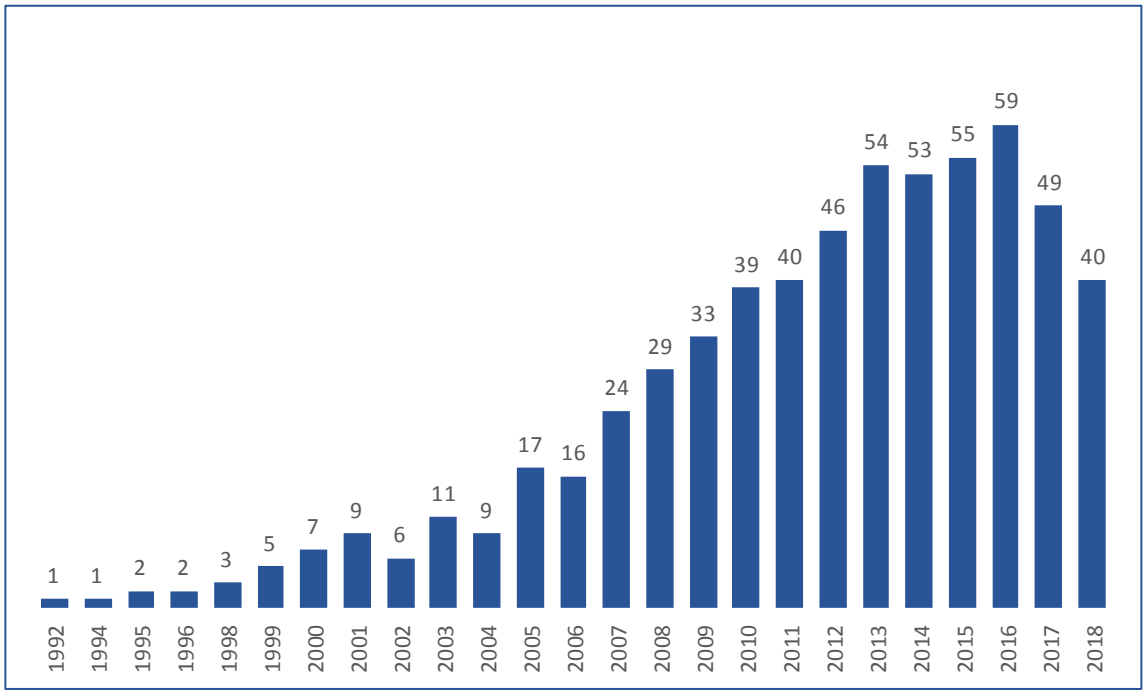


Figure 4.18 – Histogram that summarizes, for each year, the number of distinct funds involved in investments.

Obviously, the date in figure 4.18 must be less than or equal to those in figure 4.17: since the presence of a fund is necessary to achieve at least one investment, on the other hand a fund can realize more than one, of course. An analysis must also be added regarding the capitals handled annually; figure 4.19 confirms the growing trend that emerged.

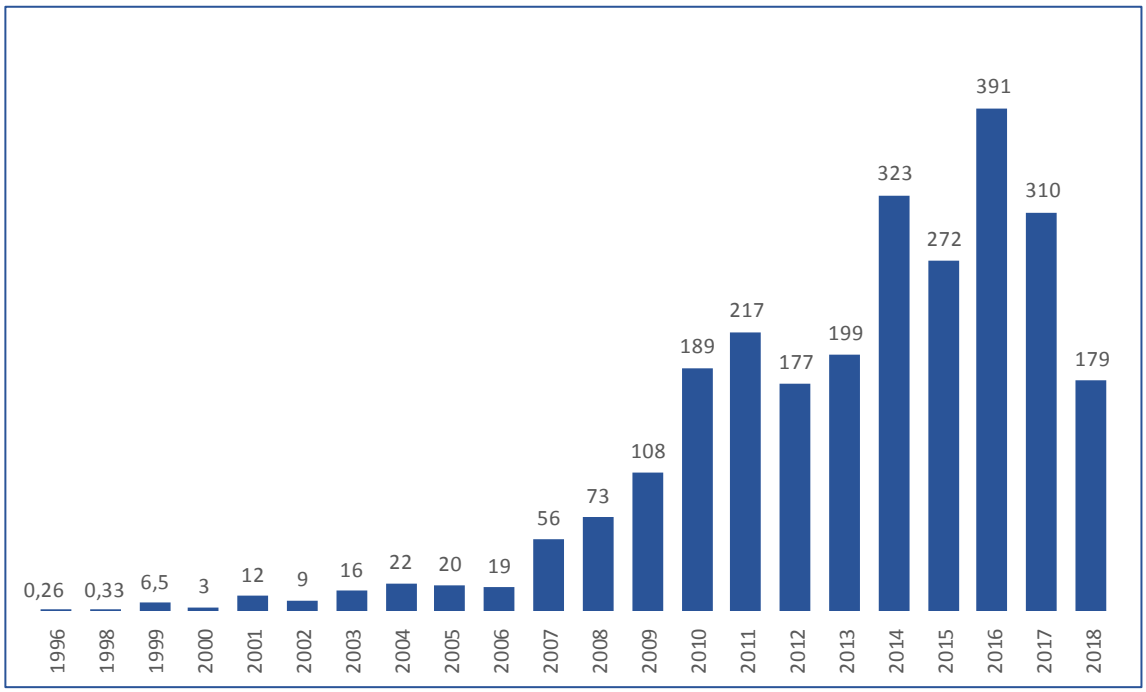


Figure 4.19 – Histogram that summarizes, for each year, the capital handled for investments (unit of measure: USD million).

2007 seems once again to be an interesting year as there is a drastic increase in capital invested; also, the transition from 2013 to 2014 reaffirms the solidity of this industry, with an increase of over 50% from one year to another.

Investments geography – Image 4.20 shows the allocation of investments on a global scale; as expected, the countries where most investments were made are USA, India and UK, as they host most of the companies and funds of the sample on their land. Around USD 1.944 billion have been invested in these three nations, over 74% of the total.
The results should not surprise: it is normal that over one billion dollars have been invested in the USA since 531 investments (out of 1,204) were made on American soil, as it can be seen by consulting table 4.21. Similarly, the capital invested in India (USD 628 million) and in United Kingdom (USD 292 million) can be justified, corresponding to 215 and 123 investments respectively.
The first fact that catches the eye is that 869 investments – over 72% of the total – have been realised in these 3 countries out of a total of 73, a highly unbalanced figure.
What also emerges is the strong heterogeneity if one considers the average investment per country; in fact, it emerges that comparing data of figure 4.20 and table 4.21, investments are on average higher in India, with an average of USD 2.921 million per transaction.
The UK and USA follow, respectively with USD 2.374 and 1.928 million per investment. From table 4.21 it can be noted that there are countries where the average investment is higher than the analysis conducted in the three main countries: see for example Kenya, USD 86 million employed for 14 projects- an average of over USD 6 million each.

Figure 4.20 – World map which allows the subdivision of the capital related to the investments made by the funds in the companies of the sample; unit of measure: USD million.

Countries	Number of investments	Invested capital (USD million)
United States	531	1,024
India	215	628
United Kingdom	123	292
Canada	37	65
Mexico	22	34
France	21	68
Germany	16	26
Kenya	14	86
Poland	14	16
South Africa	13	6

Table 4.21 – Number of investments made for the 10 main countries with detail of invested capital.

Investments sectors – The survey continues analysing the situation at sector level; the histogram in figure 4.22 almost faithfully follows the overview that was made for the companies (cf. figure 4.13). The order in fact, is almost the same, we have only reversed the position of "environment" and "manufacturing". The investments therefore follow very closely the division of companies by sector, without any particular changes.

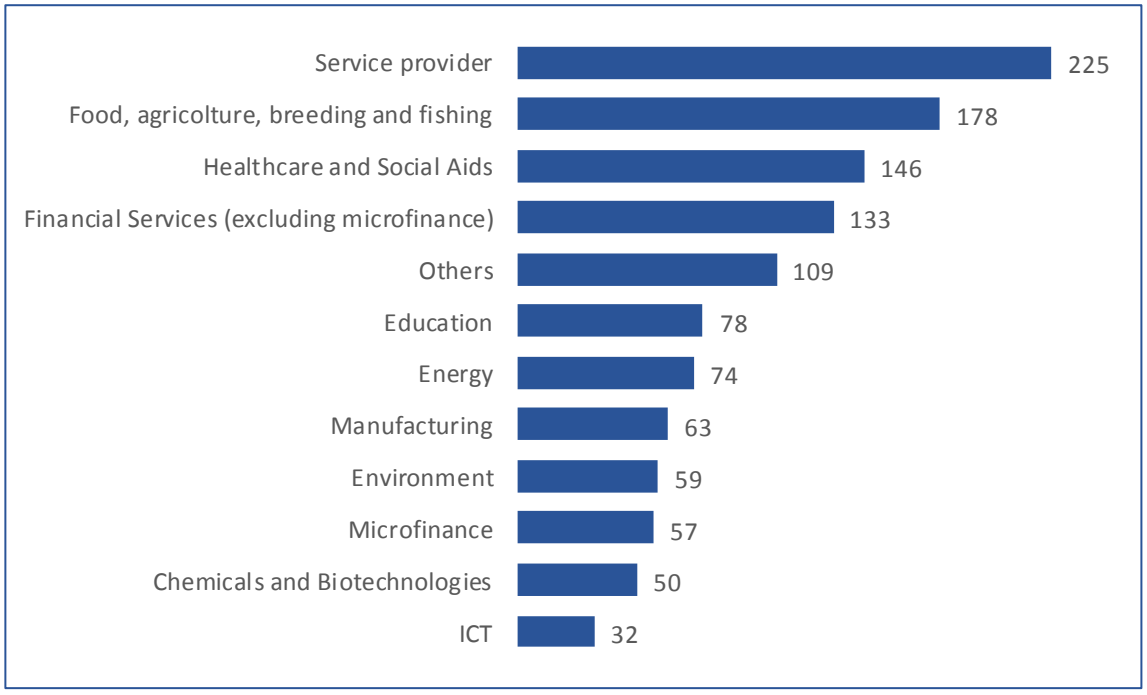


Figure 4.22 – Subdivision of the investments for sector (total: 1,204).

The subdivision of capitals invested in each sector follows again the one found for the companies, even if in a less evident way; also, in this case there are 3 large groups in which the sectors can be divided. The delivery of service, financial services and health-care sector are respectively in first place, moving from USD 341 to 445 million. The primary sector, the microfinance and all the investments that did not fall into the other categories occupy the second band, moving capital between USD 208 and 237 million.

All other sectors are positioned in the last bracket – from USD 170 million down; lastly, the ICT sector, where only 32 investments were made, for a total of USD 57 million. The detail of this study is visible in figure 4.23.

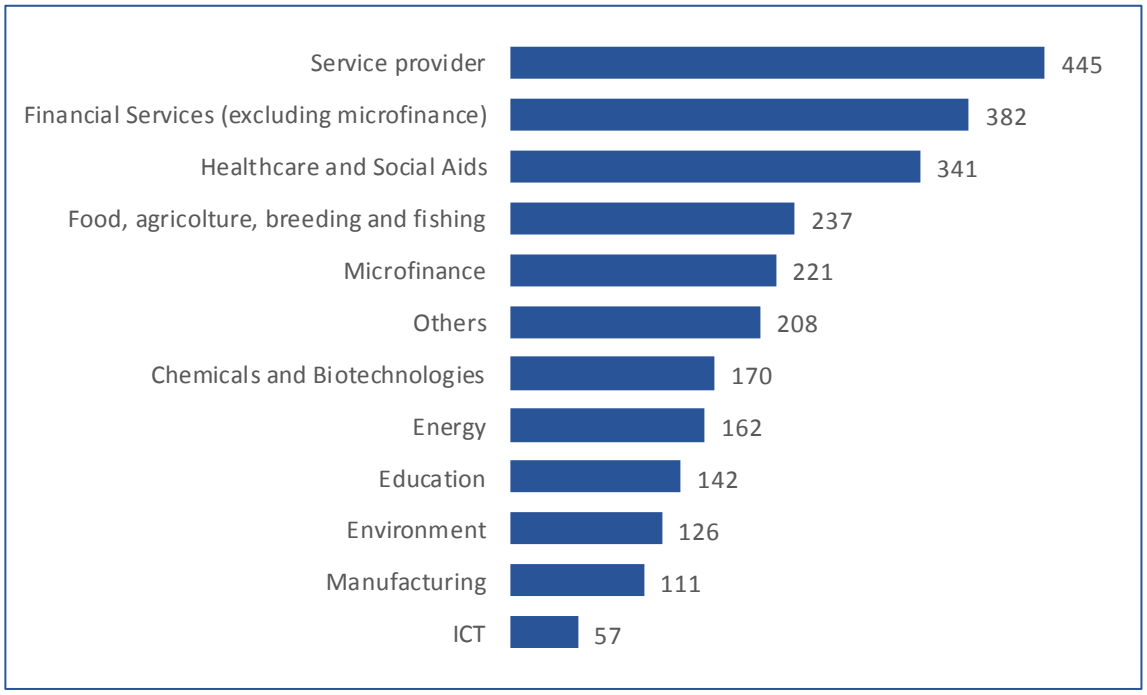


Figure 4.23 – Subdvision of capital invested for sector (unit of measure: USD million).

As it can be seen from table 4.24, the sector that is certainly more virtuous is once again that of microfinance in which microcredit plays a very important role; it is not by chance that only 57 investments have been made, however moving USD 221 million, an average of USD 3.877 million per single investment, twice as much as the provision of services for example – USD 1.978 million per investment.

Investments per sector/year – It is interesting to examine the way in which investments were made not only by discriminating the sector but also by the year. Image 4.25 – like figure 4.15 in the analysis on companies – helps to understand how USD 1.674 billion, almost two-thirds of total invested capital, has been moved only from 2013 to today. The investments made in the 2003-2012 time frame relate to USD 897 million, the remaining are very small: before 2003 only USD 31 million were invested. This is visible in the figure: a predominance of the blue areas, followed by the red ones and, finally some orange detail not always present.
However, if only the last time window, from 2013 to today, coloured in blue, is considered, the provision of services and financial services are almost equal – respectively USD 297.1 and 296.5 million.

Industry	# investments	Invested capital (USD million)	Average investment (USD million)
Microfinance	57	221	3,877
Chemicals and Biotechnologies	50	170	3,400
Financial Services (excluding microfinance)	133	382	2,872
Healthcare and Social Aids	146	341	2,336
Energy	74	162	2,189
Environment	59	126	2,136
Service provider	225	445	1,978
Others	109	208	1,908
Education	78	142	1,821
ICT	32	57	1,781
Manufacturing	63	111	1,762
Food, agricolture, breeding and fishing	178	237	1,331

Table 4.24 – Detail concerning the average investment per sector.

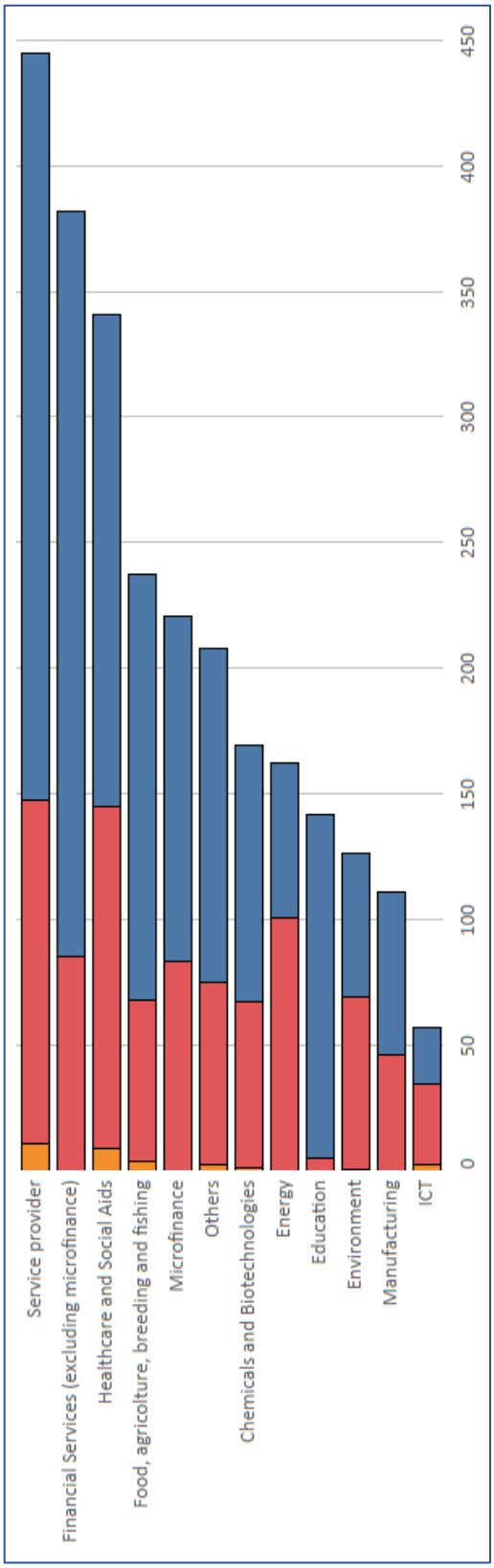


Figure 4.25 – Subdivision of the capital invested by sector and by year of investment. Investments made before 2003 are in orange, in red those made from 2003 to 2012, in blue those made from 2013 to today (unit of measure:USD million).

This study, to be followed by the conclusions, ends by focusing on the investments made in the usual 3 countries (figure 4.26).
The subdivision of investments is very heterogeneous and varies according to the country examined. In India there is a strong predominance of capitals invested in the financial sectors, in order to implement the so-called financial inclusion; financial services and microfinance services collect over USD 376 million – compared to 628 totals. However, ICT and manufacturing do not collect anything.
In the UK the situation is more homogenous, although there is also a sector in which there is no investment: microfinance. Obviously, this result, almost specular compared to the previous one, should not surprise us since we are talking about a highly developed country where poverty is not as widespread as in India and above all, there is not such a strong imbalance between the rich and the poor, as it can be observed among Indian castes.
In the USA, investments are not only greater but cover the entire range of sectors identified. The sectors in which the investments are greatest are healthcare, service provision and the biochemical sector.

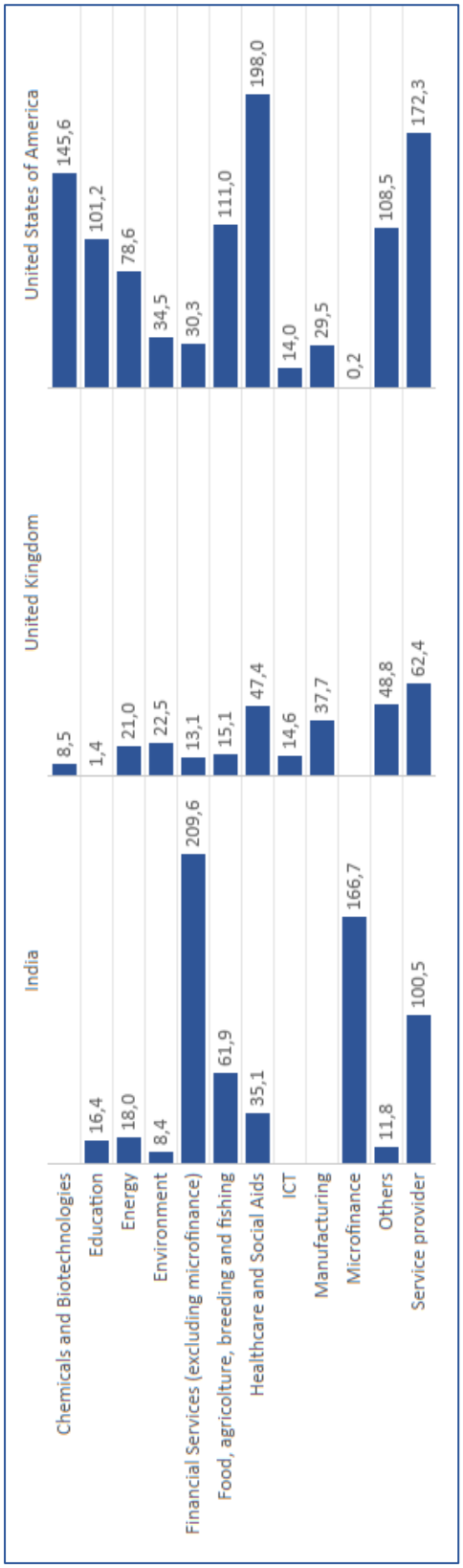


Figure 4.26 – Detail of the capital invested by sector for the three countries most involved: India, UK and USA (unit of measure: USD million).

Chapter 5

Conclusion

This is the final chapter of this thesis and it summarizes all the conclusions reached, starting from the criticalities introduced thanks to the study of the first chapters concerning the scarce literature, passing through the various reasonings made, up to the results obtained through analysis of the data collected within the database created *ad hoc*.

The study of literature has immediately highlighted that the sharing of the private subject with the public within investment funds, that in this case are called hybrid funds, is a very positive factor since the state acts as guarantor both as regards the credibility of the project itself and because, many times, it decides to take on a large percentage of the costs and any losses that would otherwise be borne by the private, or because it is the first to invest and to make money flow. The undoubted advantage is obviously, in addition to sharing the risk, not always on par, also the allocation of capital needed to realize the investment, with an important reduction against the public administration.
The problem found is that, however, the state is still forced to participate as an investor, having to invest public funds that the recent financial crisis has certainly downsized and, in addition, perhaps even having to cover losses in the private sector the benefits are much thinner, to be even cancelled and become a loss in some cases.

It was necessary to find a way to be able to generate social and environmental benefits alongside financial returns, involving the state and its capitals.
The solution was the creation of the Social Impact Bonds, a tool that made it possible to raise capital from the private sector, without the need for the public administration to participate immediately in investments. In fact, thanks to this tool, payments have been postponed by the public body, provided only if certain social-environmental objectives, established *a priori*, are reached. The shifting of the risk from the public subject to the

private entity motivates the higher yield of these bonds, when compared to traditional bonds, and allows the state to not have to make an immediate outlay of capital, further aggravating any budget deficit.

The next step was the creation of impact-oriented funds; they are funds, in most cases with private management and participation, even if there are no exceptions that actively involve the public subject as well. The difference compared to the SIBs is that the investor in order to invest, does not have to buy the bonds, it is enough to buy a portion of the fund, as it is usually the case with investments made in traditional funds. Based on the purchased share, the capital must then be paid proportionately, and the fund will subsequently be able to make the appropriate investments in the target companies with the money collected.

The first obstacle encountered regards the distinction of the various funds regarding the investment target: many funds in fact present themselves as impact-oriented when they may not be at all or only a small part of their investments are focused on this industry. The most immediate consequence is a dilution of this sector, if indeed all the funds are labelled with social impact in the end no one will really be, falling into the phenomenon called impact washing.
This involves an immediate difficulty for potential investors who are no longer able to discern which funds are really social-impact funds and which are not, but they used this label as they would be. Therefore, these potential investors could renounce investing in this industry, causing a contraction of investments. This would primarily involve a lower availability of capital and therefore fewer investments aimed at improving welfare with a subsequent worsening of socio-environmental conditions and an increase in public administration budgets, to which these types of investments have instead given a large help.
Secondly, the dilution would lead many subjects to disinvest, seeing the credibility of the entire sector undermined, with repercussions, also in this case, on the collective welfare, and again, on public budgets, up to the most extreme case of the failure of the industry.
For this reason, organisations – from the fund to the target companies in which it invests – that make impact-oriented investments usually adopt some common standards catalogues, in order to make themselves recognizable to investors. Furthermore, the novelty of the sector makes

sure that the transparency of all the subjects involved is fundamental, as well as the skills and abilities of the fund managers. It is indeed very difficult to evaluate investments in different sectors and countries, with levels of risk and yield that are not comparable, perhaps with different impact measurement standards.

To try to maintain a certain integrity and not create an excessive distortion in the data that would have been analysed later, it was decided to start the cataloguing of the funds and information relating to the latter using funds for which it was certain that they would make investments with socio-environmental impact. In fact, the funds catalogued on ImpactBase were chosen, the site created and managed by GIIN, the world's leading institution in the field of impact investments.
The profiles of these funds have been completed and enriched by drawing on the information on another important database: Thomson ONE Banker; after looking for the profiles of the funds, those of all the companies in which the funds were invested were sought and, backwards, other funds were added which, according to the description, were probably of social impact.

The database was created entirely from the beginning; in a first moment all the profiles of funds and companies were downloaded, then the logical structure of the tables was created, setting the variables of each of them according to the functional needs and taking as a model the structure with which the profiles of the organisations were made on the various databases. At the moment the database is made up of over twenty tables that interact with each other thanks to join and primary keys opportunely created – as the unique identification code for each fund and company. They contain all the information in a more or less detailed way: some present more aggregated information and, through the link with others, it is easy to obtain more complete and extensive information.
The idea was to create, in an almost symmetrical way, a macro-table to enclose the main information of the funds and, in the same way, one for the companies of the sample. The intersection between funds and companies obviously generate investments, to which all the other tables are dedicated, in order to have qualitative and quantitative information: geographical indications, sector, current status and stages, the number of investments,

the number of investment rounds and so on until the information on the members of the boards of the various organisations.

The first data that emerges from the analysis is that most of the funds and companies are located in three countries mainly: the United States of America, the United Kingdom and India. The headquarter of the fund does not surprise where it is located, but the company's position is already more significant, since it is the latter that receives the capital and uses it, locally, to carry out its investment projects.

It has been highlighted in fact, that most of the attempts made by charity and philanthropy associations fail for two reasons: first of all the discontinuity and the strong variance of cash flows make it very difficult to undertake particularly demanding and expensive projects, as there is no guarantee to the continuity of the loans; secondly, the strong geographical separation between the entity that collects money and the place where the project is undertaken means that it is very difficult to intervene and solve local problems.

This type of investment solves both problems since the funds manage to ensure the continuity in capital injections and invest in companies located directly on the territory where intervention is needed, which therefore know the local culture and reality quite well.

The fact that a good part of the companies is in the USA and in the UK suggests that many investments have been made there. In fact, the data related to the transactions confirm that it was expected, so it is necessary to deny a commonplace very frequent; interventions to solve social and environmental problems do not only concerns developing countries. In fact, often when it is talked about this issue, these investments are approached with Third World countries, but this is not the case, just think of all the problems related to the environment, pollution, health, education and so on that concern the most developed countries. It is not a coincidence that many Social Impact Bonds are used to solve problems related to large urban centres in developed countries.

All this is confirmed by the fact that most of the funds and companies – respectively over 72% and 66% of the total – are in the developed countries. This implies that most of the capital and investments revolve around these countries, although India plays a very important role within the various analyses.

What is stated is also relatively certain since most of the funds have concluded the phase of capital raising and are already investing, or still collecting money but at the same time they have already dedicated themselves to the first investments; to avoid possible distortions in the results, it should be noted that the analyses were carried out on a sample composed almost exclusively of active and non-liquidated or bankrupt organisations.
Worthy of note is the strong homogeneity between funds and companies with regard to their creation: there are historical organisations, even a couple of nineteenth-century enterprises, but most of the subjects present in this industry are newly created. Many funds and companies have been founded *ad hoc* with the aim of creating only or mainly impact-oriented investments. In fact, observing the histograms describing their seniority, there are very significant peaks in recent years. This inevitably affects the investments and capital moved, much more intense and elevated in recent years.

An important analysis that has also been carried out is that concerning the sectors in which the companies of the sample operate and those that have handled most of the capital and investments of the funds. The result that has emerged is a strong sector heterogeneity: in fact, depending on the country analysed, the target sector of investments changes.
In emerging countries, capital is mostly allocated in the financial and especially microfinance sectors, to underline the importance of access to credit for the populations that could not afford the traditional banking channels, having no guarantee. This leads to the so-called financial inclusion and, subsequently, the social inclusion; we try to bridge the gap between the local classes, a difference between rich and poor that is much more evident than that of developed countries.
By granting access to basic services to people through microcredit and providing education not only at school but also at the level of entrepreneurship and trades, such as helping local farmers, we try to stimulate the local economy, making the population independent, through the development of micro-entrepreneurship and self-employment; the purpose is therefore reached for which this type of investments was originally designed.

On the contrary, in the developed countries the microfinance sector is non-existent or moves irrelevant capital. The more we focus the analysis on these countries, the more we can see that the more involved sectors are those related to the socio-health sector, the environment and the energetical sector, where now it is possible to try to take advantage of any expedient to undertake projects related to renewable energy sources.
In the more developed countries with less problems, investments are focused on the most niche sectors, for example in Germany on USD 307 million, 266 have been invested to the energy sector.
An industry that has recorded very high numbers everywhere is what has been defined as a "service provider", since it includes all the companies that provide a service of all kinds – tourism, mining, consulting, transport, etc.

Based on what has just been stated, the strong virtuosity and impetus that characterizes this sector is evident; the funds and the most recent companies have in fact moved much higher capital than organisations even just a decade ago, recording a significant upward trend.
It is sufficient to say that in our small sample more than 1,200 investments have been made between funds and companies, for an amount that exceeds USD 2.600 billion, with some transactions of almost USD 70 million each. Very large numbers that should not amaze, in fact to be a very young industry – we started talking about social-impact investments since 2007 – the official data provided by GIIN show an exponential growth; in the last three annual surveys, the assets under management were respectively USD 228, 114 and 15 billion. Between the survey of 2018 and 2017 there was a doubling of the capital involved (+100%) while between 2017 and 2016 the increase was +660% with more than half of the respondents who claimed to have achieved the first impact-investments in the last decade, as also confirm the results obtained through the information contained in the database, as evidence of how it is a fast-growing field.

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